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OBSERVATIONS ON THE CEREBROSPINAL FLUID OF ACUTE DISEASE *

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The anatomy of the meningeal-choroidal complex, or, as it may conveniently be termed, the subarachnoid system, is quite well understood: its physiology and pathology are shrouded in a large measure of uncertainty, while recognition of its clinical importance is recent and, even yet, not very general.

For a summary and an extension of our knowledge of the development, structure and function of this part of the envelop of the central nervous system, we are indebted to Weed,[1] to whose writings the reader is referred for details and the literature

It seems to be established that the cerebrospinal fluid is largely a product of the choroid plexus of the cerebral ventricles, with small, probably insignificant, accretions from the general ependymal cells and the capillaries of nervous tissue itself, through their perivascular channels; that it exists in an amount of from 60 to 150 c.c., and that its formation is rapid and its circulation active, particularly in the upper or cranial portion of the system of channels through which it circulates.

The route taken by the major part of the fluid is one which leads from the lateral ventricles through the foramina of Monro to the third ventricle, and then through the aqueduct of Sylvius to the fourth ventricle. From this chamber it escapes by the median foramen of Magendie and the lateral foramina of Luschka into the cisternae lying in the cerebellobulbar angle, where, contained between arachnoid externally and pia internally, the fluid is distributed to the communicating spinal subarachnoid spaces and to the cerebral and cerebellar spaces as a capillary layer, except where the enclosing membranes are separated by wider intervals, as at the cisternae.

Absorption is chiefly by the great venous sinuses, largely through the pacchionian bodies, which are but augmented arachnoid villi, with lesser drainage into the lymphatic system surrounding certain cranial nerves and vessels. Drainage is largely a physical process determined by the difference in pressure existing in this subarachnoid system and in the venous sinuses—a matter of undoubted clinical importance.

This system may, in a sense, be conceived of as an accessory or specialized circulation between the vascular choroid plexus and the venous sinuses. That the fluid exchange here is great, there is no doubt.

Frazier[2] estimates the total amount of fluid secreted in twenty-four hours to be from 360 to 720 c.c., and is of the opinion that the entire amount—from 60 to 150 c.c.—is replaced every three hours. He cites also the fact that within two hours of the injection of phenolsulphonephthalein into the ventricles, 60 per cent. is recovered from the urine, and that the subarachnoid spaces of a dog will absorb about 500 c.c. of physiologic sodium chlorid solution per hour, the rate of absorption being in direct ratio to the pressure.

Flexner and Amoss[3] have made the most thorough recorded experimental study of the normal and pathologic physiology of the meningeal-choroidal complex, establishing the fact of its rôle as a barrier to the passage of the virus of poliomyelitis from the blood to the central nervous system, and the fact that this barrier is broken down under the influence of inflammation excited mechanically or chemically.

This principle has been found applicable to other infective agents than that of poliomyelitis.

Austrian[4] demonstrated in rabbits the importance of subarachnoid injections of serum, with resulting inflammation, in determining the localization of meningococci in the meninges in meningococcus sepsis. Weed, Wegeforth, Ayer and Fulton[5] made similar but more extensive studies, which emphasize the effect of lumbar puncture in exciting inflammation and thus increasing permeability.

That similar conditions govern the permeability of the meningeal-choroidal complex for chemical substances was shown by Viton[6] in 1913 and by Barbat[7] in 1918 for arsenic.

The complexity of the problem is brought out by Amoss and Eberson,[8] who question the validity of Austrian's conclusions.

These observers believe, and cite some experimental evidence to show, that the meningeal localization of

* Read before the Section on Diseases of Children at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

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meningococci in rabbits given serum by the thecal route, when a meningococcus bacteremia exists, is the result of injury from the needle rather than of increased permeability consequent on the local effect of serum on the leptomeninges. They also found it impossible to direct the meningococci circulating in the blood into the cerebrospinal meninges of monkeys either with or without aseptic meningitis. It is admitted, however, that because of the high insusceptibility of the monkey to infection with the meningococcus, these experiments have little or no clinical bearing.[9]

The physician can supplement the laboratory studies thus briefly summarized. Since Quincke introduced lumbar puncture in 1890, an appreciable amount of clinical data has been set down. It is worth while to collect and sift this, to add a fairly extensive series of observations of our own, and to evaluate the whole from a clinical point of view. In order to keep within limits, consideration of meningitis in the ordinary acceptance of the term is omitted. We shall take account of the participation of the meninges (meningitis serosa Dupré) as revealed by study of the cerebrospinal fluid only in those diseases that ordinarily are not supposed specifically to involve the central nervous system.

That the meninges participate in the systemic reaction to a variety of infections not as a rule giving rise to meningitis has not had wide recognition. For example, Frazier,[10] in a paragraph on the spinal fluid of acute infections, is content with the statement that "definite pleocytosis which may reach very high counts is found in a large number of cerebrospinal diseases—particularly the infectious meningitides, meningococcic, pneumococcic, tuberculous and cerebrospinal syphilis, paresis, tabes dorsalis, brain abscess and herpes zoster."

Symptoms of meningeal irritation, headache, delirium, irritability, hyperesthesia and exaggerated reflex activity are accepted as a matter of course as inaugural symptoms of perhaps the majority of the acute infections of any degree of severity. Only when these symptoms persist and become intense are they ordinarily deemed of enough significance to suggest lumbar puncture. Furthermore, if this lumbar puncture shows a "clear fluid," additional study is usually omitted, the cell count and the globulin determination are neglected, and the meningeal features of the picture are suppressed in the clinician's consciousness. A result of this has been that the cerebrospinal fluid of diseases other than the various forms of meningitis and poliomyelitis has been little considered. No broad study of the meningeal phase of acute febrile diseases, based on the character of the cerebrospinal fluid in any extensive series of miscellaneous cases, has rewarded our search of the literature. One finds, in fact, evidence of much confusion of ideas in the conflicting statements unearthed.

We quote from a few typical statements set down since Dupré,[11] in 1904, coined and defined the term meningismus.

Connal[12] examined the "fluids of a large number of cases other than those of meningeal irritation. Cases of scarlet fever, enteric, whooping cough, erysipelas, cerebral tumor, epilepsy, tetany, acute lobar pneumonia, bronchopneumonia, gastro-enteritis, uremic coma and various minor ailments were punctured." The centrifuged sediment was found in each instance to contain very few cells—one to every two or three fields—generally mononuclears.

Blatteis and Lederer[13] state that "when the cerebrospinal symptoms were due only to irritation the fluids were found to be absolutely normal in every way."

Abramson[14] experiences no difficulty in determining fluid from a case of meningism, as it uniformly in his experience "shows no increase in cells, no albumin-globulin and a prompt and heavy reduction of Fehling's solution."

DuBois and Neal[15] remark that in meningismus pressure of the cerebrospinal fluid is increased, there are "very few cells," and globulin is ±.

Heiman[16] finds that "in intoxication cases no variation from the normal spinal fluid occurs."

Johnston[17] found that cases with meningism showed "no pleocytosis except in one instance." He also makes the useful observation that a negative globulin test may occur in a pathologic fluid.

At variance with the statements quoted above are these:

Warrington,[18] in common with Hutinel,[19] Jean and Cardamatis,[20] and others, considers that just as "there is no essential difference between the pathogenesis of purulent meningitis, and of serous meningitis or ependymitis, so there is no true pathologic demarcation between meningism and serous meningitis, though examination of the cerebrospinal fluid is a most valuable means of determining the degree of the process."

Lucas[21] believes that in pyogenic infections the reaction in the meninges resembles that in the true serous membranes. He cites a single case of meningismus in which the number of cells in the spinal fluid varied from 10 to 80, and concludes that there are many conditions giving the same cytologic findings in the spinal fluid: (*a*) encephalitis; (*b*) epidemic myeloencephalitis; (*c*) meningismus; (*d*) tuberculous meningitis, and (*e*) syphilis of the central nervous system.

Plaut, Rehm and Schottmüller,[22] without citing any series of observed cases, make the statement that lobar pneumonia, pertussis, scarlatina, measles, mumps, enteric fever and sepsis with cerebral symptoms (meningitis serosa—Dupré) may have a cerebrospinal fluid under heightened pressure, with globulin and an increase in cells, in some instances amounting to several hundred in a cubic millimeter.

9. For a study of normal and pathologic history of the choroid see Findlay, J. W.: The Choroid Plexus of the Lateral Ventricles of the Brain: Their Histology, Normal and Pathologic, Brain **22**: 161, 1899.
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MENINGEAL REACTION IN ACUTE DISEASES

The cerebrospinal fluid of certain acute diseases has been studied with varying degrees of thoroughness.

Lobar Pneumonia.—The most complete study is that of Voisin,[23] whose thesis is a catalogue of the literature up to 1904. Forty-nine lumbar punctures were made in forty-five cases of lobar pneumonia or bronchopneumonia in which meningeal symptoms were observed. Cellular increase was found in the cerebrospinal fluid in eight, the cells numbering from 11 to 66 per cubic millimeter. The patients, in all cases but one, had purulent otitis media. Sixty-four lumbar punctures were made in thirty-eight cases in which there were meningeal symptoms. In fifteen of these there was no abnormal reaction in the spinal fluid. Of the twenty-three cases showing modifications, nineteen had a leukocyte reaction more or less marked. Of these, 60 per cent. showed albumin. The patients in most of these cases had suppurative otitis, which raises the question as to whether these cases can properly be classed as mere meningismus. Only six patients in these thirty-eight cases recovered. Voisin concludes that in pneumonia there may be every gradation of meningeal reaction, from a slight increase in pressure to purulent fluid. Litchfield[24] finds it the rarest exception for cases of pneumonia with meningeal irritation not to present positive findings on lumbar puncture, and reiterates what has already been found true in meningococcus meningitis,[25] that clear normal fluid may be obtained by lumbar puncture, though there is purulent inflammation of the meninges located at higher levels. In this connection, the work of Cushing[26] may be recalled, which brings out the difference in composition of the ventricular and subarachnoid fluids in sugar and albumin content, and in bactericidal and other immunologic properties.

Scarlet Fever.—Several reports establish a meningeal reaction in at least some cases of this disease. Hutinel,[27] who was perhaps the first to grasp the general clinical significance of the changes in the cerebrospinal fluid of a variety of acute diseases, finds that the exanthems with which meningism is a frequent associate are often accompanied by a lymphocytosis of the spinal fluid. He suggests that a common origin of the meninges and the skin in the ectoderm may be a not altogether satisfactory explanation of the tendency to the invasion of the spinal and cerebral coverings in the same manner as that of the skin by the unknown infective agents of the eruptive fevers. Porter[28] has expressed a similar point of view, as has Sharpe,[29] who cites a case of scarlet fever with spinal fluid under great pressure and containing much globulin which, at necropsy, revealed edema of the leptomeninges. Kirchheim and Schröder,[30] in a paper in which the anatomic basis of meningism has had careful study, report definite meningeal reaction in three cases of scarlet fever which came to necropsy. Gauss[31] examined the spinal fluids of fifty patients, aged from 1 to 14 years, having scarlet fever or associated exanthems. All cultures were sterile. The cell count averaged eight, but eleven fluids contained between 10 and 20 cells, from 80 to 90 per cent. of them lymphocytes.

Mumps.—Meningitis is one of the rarest complications of parotitis. However, if one studies a series of several hundred cases, an opportunity possible in large military hospitals, he will be impressed with the frequency of meningeal symptoms.

Chauffard and Boidin[32] cite two cases of mumps with meningism, associated with well marked lymphocytosis of the cerebrospinal fluid, which came and went with the meningeal symptoms, and which in one case was so marked that the fluid was quite turbid. Larkin[33] reports a lymphocyte increase in the cerebrospinal fluid in several cases. In 1902, Monod[34] practiced lumbar puncture systematically in infants with parotitis, and found lymphocytosis of the cerebrospinal fluid six times in eight cases. Acker[35] has given a very complete summary of the observed facts in mumps meningitis, in which he cites the findings of Sicard, Chauffard and Boidin, Dopter, Netter, Comby, Hutinel, Nobecourt and Brelt, and Feliciant, confirming the presence of lymphocytosis in the cerebrospinal fluid in parotitis with nervous symptoms. This feature of parotitis seems, therefore, quite established.

Influenza.—Observations of meningismus accompanying influenza are an everyday bedside experience. Gendre and Terrien[36] give an account of a case of this kind in which there was pleocytosis of the cerebrospinal fluid, with recovery.

Gastro-Enteritis.—Meningismus is a very common accompaniment of the gastro-enteritis of children. Hutinel[27] has pointed out the frequency of a subarachnoid reaction in this condition. Blatteis and Lederer[13] state that cases of "intestinal autointoxication" with meningeal symptoms may yield fluids chemically and cytologically resembling tuberculous ones.

Rabies.—Abramson[14] found the cerebrospinal fluid in a case of rabies opalescent, with a large number of polymorphonuclear leukocytes, and without organisms on smear or culture. Deniges and Tabrazes[37] report a case in which the cerebrospinal was under high pressure, contained 0.2 gram of albumin per liter, and had very few cells.

Lochelongue[37] reports the finding of pleocytosis in the cerebrospinal fluid withdrawn from patients in individual cases of malta fever, diphtheria with paralysis, tetanus, plague, malaria and trypanosomiasis. In the same monograph will be found references to positive findings in the fluids of cases of uremia, alcoholism, saturnism and herpes zoster, observed by various writers.

REPORT OF PERSONAL OBSERVATIONS

Our own series of observations on the spinal fluid of miscellaneous acute diseases is a by-product of the study of the early phases of meningococcus meningitis

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made at the base hospital at Camp Jackson, South Carolina. Many other acute infections with meningismus came under suspicion in the attempt which was made to recognize meningococcus meningitis during the premeningitic stage of meningococcus sepsis. Lumbar punctures were made in over 100 of these varied medical cases. All counts and globulin estimations were made by thoroughly competent persons having no knowledge of the special study in progress, and no instructions except that every precaution tending toward accuracy should be regarded. For the care with which the laboratory work was done, we are indebted to Marshall A. Barber, Major, S. C., U. S. Army, Chief of the Laboratory, Base Hospital, Camp Jackson, S. C.

The study is not complete, differential counts, the colloidal gold test and other elaborations having been omitted in the press of work. Several cases showing more than a single + Wassermann reaction are omitted from this report, as are all instances of meningitis of any form, poliomyelitis, mastoiditis or other disease process tending specifically to involve the central nervous system. The seventy-six cases tabulated are therefore those with meningismus not resulting in meningitis at any stage of their progress.

TABLE 1.—RESULTS OF EXAMINATION IN CERTAIN ACUTE INFECTIONS

	Cerebrospinal Fluid					Blood Findings								Clinical Features			
Case No.	Amount C.c.	Pressure	Cells	Globulin	Reduction	Leukocytes	Neutrophils, %	Transitionals, %	Eosinophils, %	Small Mononuclears, %	Large Mononuclears, %	Culture	Wassermann	Meningeal Irritation	Temperature	Severity	Result
						LOBAR PNEUMONIA											
1	35	0	200	+	+	.....	..	..	..	.	..	0	..	++	104.0	+++	Death
2	7	0	32	+	+	.....	..	..	..	..	..	0	+	++	102.4	++	Recovery
3	25	+++	23	+	+	13,080	64	..	..	22	4	0	0	++	103.0	+	Recovery
4	..	..	15	+	..	.....	..	..	..	..	..	..	..	+	103.0	+	Recovery
5	15	0	15	0	..	54,000	..	..	..	..	..	0	+	+	101.0	+	Recovery
6	15	0	14	+	+	24,000	82	..	..	8	10	0	0	++	104.0	+++	Death
7	15	..	12	+	+	20,000	78	..	..	12	10	Pneum. Type I	..	+	103.0	+++	Death
8	15	+	10	+	+	13,900	87	1	..	11	1	..	..	+	103.4	++	Recovery
9	35	+++	4	0	+	7,000	77	..	..	23	..	..	..	+++	104.0	++	Recovery
10	12	0	2	+	+	7,200	62	..	..	31	7	0	0	+	104.8	+++	Death
11	10	+	2	±	..	34,000	71	..	..	22	7	0	++	++	99.0	+	Recovery
12	15	+	6	0	+	31,000	82	3	.	15	..	..	..	++	102.0	+	Recovery
						BRONCHOPNEUMONIA											
79	..	0	20	0	..	20,000	80	1	..	16	3	..	0	++	102.0	+	Recovery
64	..	..	16	0	..	19,800	82	3	..	15	..	..	..	+	102.2	+	Recovery
65	..	..	16	+	+	12,900	75	..	..	25	..	0	..	++	102.4	++	Death
66	10	0	15	0	..	.....	..	..	..	..	..	..	+	+	99.2	+	Recovery
67	..	..	12	..	..	.....	..	..	..	..	..	..	..	+++	105.0	++	Recovery
68	..	+	9	0	..	.....	..	..	..	..	..	..	..	+++	104.2	++	Death
69	..	..	8	..	..	.....	..	..	..	..	..	..	..	+	104.8	+++	Death
70	..	..	6	..	..	.....	..	..	..	..	..	..	..	+	.....	+++	Death
71	..	+	6	0	..	.....	..	..	..	..	..	..	..	+++	104.0	+++	Death
72	15	++	6	..	..	.....	..	..	..	..	..	..	..	+	99.0	+	Recovery
73	..	..	5	..	..	.....	..	..	..	..	..	..	..	+	100.0	+	Recovery
74	5	0	4	..	..	.....	..	..	..	..	..	..	..	+	104.0	+++	Death
75	15	..	2	0	..	.....	..	..	..	..	..	..	..	++	104.0	+++	Death
76	12	..	2	..	..	.....	..	..	..	..	..	..	..	+++	104.8	+++	Death
						INFLUENZA											
49	..	0	40	0	0	6,600	81	..	..	19	..	..	..	++	105.2	+	Recovery
50	10	++	38	+	+	4,880	75	..	..	25	..	0	..	++	103.0	+	Recovery
51	..	..	20	+++	..	.....	..	..	..	..	..	..	..	+	98.4	+	Recovery
52	10	+	15	±	0	?	68	1	..	30	1	0	..	++	98.6	+	Recovery
53	..	..	14	0	..	10,000	..	..	..	..	..	0	..	++	104.2	+	Recovery
54	15	+	9	+	+	.....	..	..	..	..	..	0	..	+++	101.4	+	Recovery
55	..	..	7	±	..	11,300	69	..	1	27	3	..	..	++	103.2	+	Recovery
56	..	.	6	±	..	.....	..	..	..	..	..	0	..	+	99.3	..	Recovery
57	10	0	3	..	..	6,400	85	..	..	7	8	0	0	++	103.0	+	Recovery
58	50	+	3	±	0	.....	..	..	..	..	..	0	0	+++	101.3	..	Recovery
59	15	+	3	..	..	.....	..	..	..	..	..	..	..	++	105.0	+	Recovery
60	20	+	3	..	..	.....	..	..	..	..	..	..	..	++	99.6	+	Recovery
						ACUTE FOLLICULAR TONSILLITIS											
30	25	+	172	+	..	.....	..	..	..	..	..	..	..	+++	101.0	..	Recovery
17	10	..	14	+	+	.....	..	..	..	..	..	0	..	++	100.0	..	Recovery
28	20	..	12	+	+	.....	..	..	..	..	..	0	..	+++	101.3	..	Recovery
						TYPHOID VACCINE REACTION											
31	25	..	45	+	..	.....	..	..	..	..	..	..	..	++	102.0	..	Recovery
42	..	..	7	+	..	.....	..	..	..	..	..	..	..	++	101.6	..	Recovery
44	..	..	6	..	..	5,500	75	..	..	25	..	..	..	+++	101.4	..	Recovery
45	10	..	6	..	..	.....	..	..	..	..	..	..	..	++	100.4	..	Recovery

ANALYSIS OF TABLES

In the accompanying tables are shown the diagnosis, the temperature at the time of the lumbar puncture, the degree of the meningeal irritation and of the severity of the more general symptoms present, and, in many instances, the number of leukocytes in the blood and the differential count. The amount of cerebrospinal fluid withdrawn is given, also a rough estimate of the pressure without manometric readings. The cell count, the globulin determination by the butyric acid method, and the result of the test for reducing bodies is shown.

By this tabulation the relations of the reaction of the subarachnoid system, as shown by changes in the cerebrospinal fluid, to some clinical and laboratory features of acute disease are made available for study:

1. *Relation of the Subarachnoid Reaction to the Degree of Meningeal Irritation.*—No very direct relation is apparent. As stated by Voisin,[23] cases without meningeal irritation may show pleocytosis and a globulin increase in the cerebrospinal fluid. The opposite is also true. The tables show that it is not always the case that the highest degree of meningism gives the greatest variation from the normal, or even any variation at all, in the cerebrospinal fluid.

2. *Relation of the Subarachnoid Reaction to the Clinical Estimate of the Severity of the General Symptoms, Including Temperature.*—Again, no constant relation appears.

3. *Relation of the Subarachnoid Reaction to the Leukocytic Reaction in the Blood.*—The study of this

point also gives negative conclusions. Many cases with pronounced leukocytosis are without significant alterations in the cerebrospinal fluid, and vice versa.

4. *Relation of the Subarachnoid Reaction to Prognosis.*—In general, it may be said that a pleocytosis and a globulin increase in the cerebrospinal fluid in an acute disease do not in themselves make the prognosis more grave. In our judgment, they have no prognostic value, except in the rare instances in which an oncoming meningitis is indicated.

THE CEREBROSPINAL FLUID OF CERTAIN ACUTE INFECTIONS

The character of the cerebrospinal fluid in certain acute infections is shown in the tables.

1. *Lobar Pneumonia.*—Of twelve cases of lobar pneumonia, in seven there was a cellular reaction in the cerebrospinal fluid of from 12 to 200 cells; in eight there was a globulin increase. Four patients in the twelve cases died. Three patients among the seven with spinal fluid pleocytosis died.

2. *Bronchopneumonia.*—In fourteen cases, lumbar puncture was made. In five of these cases there was an increase in cells varying from 12 to 30. Only one of these five patients died, while eight cases of the entire fourteen were fatal.

3. *Influenza.*—Fourteen patients in cases with meningismus recovered. Of these, five had cerebrospinal fluid pleocytosis of from 14 to 40 cells. Only three had a globulin increase.

4. *Miscellaneous Cases.*—In all three cases of acute follicular tonsillitis with meningism, there was pleocytosis and a globulin increase. The cells numbered from 12 to 172. None of these patients died. It is of interest here to recall like findings already cited in the case of scarlet fever.

In two cases of sepsis there was a significant subarachnoid reaction. In one case of variola there was a great increase in pressure; globulin was present, and there were 20 cells. This finding suggests an explanation of the headache, vomiting, delirium and lumbar pain that are initial features of smallpox. Hutinel's theory,[37] already cited, gains support from this observation and from our single case of measles with 16 cells.

Of twenty-eight miscellaneous pathologic conditions in which there was meningismus, and from which spinal fluid was withdrawn, there was pleocytosis in seventeen, while in only four of the instances in which the cerebrospinal fluids were examined was a globulin increase revealed.

COMMENT

The results of the examination of the cerebrospinal fluid in this quite large and varied group of acute diseases confirm and perhaps slightly extend the observations of others. There is no question that the meningeal-choroidal complex shares in the systemic reaction to the toxins or the infective agents of a very considerable number of acute diseases, and that the cerebrospinal fluid of meningismus is not always, or even usually, normal.

Of no slight clinical moment is the comparative permeability of the meningeal-choroidal complex to various infective agents and their toxins. Of the accepted pathogenic organisms, the meningococcus finds readiest access to the subarachnoid system. In our experience,[38] this penetration takes place in about 95 per cent. of meningococcus septicemias. If Liebermeister's[39] statement is true, that in 25 per cent. of the cases of pneumonia there is distinct suppurative inflammation in the membranes of the spinal cord, even though their gross appearance is unchanged, the pneumococcus and its toxins have an even stronger

TABLE 2.—MISCELLANEOUS DISEASES

	Cerebrospinal Fluid						Blood Findings								Clinical Features		
Case No.	Amount C.c.	Pressure	Cells	Globulin	Reduction	Disease	Leukocytes	Neutrophils, %	Transitionals, %	Eosinophils, %	Small Mononuclears, %	Large Mononuclears, %	Culture	Wassermann	Meningeal Irritation	Temperature	Result
20	20	+	44	±	..	Lumbago	.....	..	..	..	..	..	..	+	+	99.0	Recovery
29	2	+	40	+	..	Strep. hem. septicemia	.....	..	..	..	..	..	Hemolytic streptococcus	..	+++	102.0	Death
80	20	+	33	0	+	Typhoid	7,280	63	..	..	35	2	Typhoid bacillus	0	+++	99.0	Recovery
14	15	..	27	±	..	Septicemia	42,000	62	8	..	15	15	..	..	+++	100.4	Death
32	20	..	24	..	..	Postoperative	.....	..	..	..	..	..	..	..	++	98.6	Recovery
21	..	..	22	0	..	Psychopathic state	.....	..	..	..	..	..	0	..	+	98.0	Recovery
15	20	+++	20	+	+	Variola	9 000	65	..	1	32	2	..	..	++	104.2	Recovery
33	10	..	18	±	..	Acute bronchitis	15,000	..	..	..	..	..	..	..	+++	103.0	Recovery
16	..	..	17	+	..	Pleurisy	.....	..	..	..	..	..	..	..	+	97.3	Recovery
35	15	..	16	..	..	Measles	.....	..	..	..	..	..	..	..	+	97.0	Recovery
36	..	..	15	..	..	Arthritis	.....	..	..	..	..	..	..	+	++	96.0	Recovery
22	5	+	14	±	..	Migraine	8 200	75	4	..	20	1	..	..	++	102.0	Recovery
18	10	..	13	..	..	Mastoiditis	12 000	85	1	..	11	3	..	..	+	104.0	Recovery
26	..	+	13	..	..	Syncope	7,200	50	1	..	47	2	..	..	+	.....	Recovery
27	..	..	12	±	+	Diabetes	.....	..	..	..	..	..	0	+	+	98.0	Recovery
23	30	..	12	0	+	Lumbago	.....	..	..	..	..	..	..	..	++	99.0	Recovery
37	15	+	12	..	..	.....	.....	..	..	..	..	..	..	..	++	102.0	Recovery
24	..	..	11	±	..	Acute alcoholism	.....	..	..	..	..	..	..	..	+	99.0	Recovery
38	25	++	11	0	..	Hysteria	9,830	75	..	..	21	4	..	..	+++	104.0	Recovery
19	60	+++	11	+	+	Coma undetermined	.....	..	..	..	..	..	0	0	++	105.4	Death
39	..	..	10	..	..	.....	.....	..	..	..	..	..	..	..	+	100.0	Death
40	10	..	10	..	..	Malaria	5,300	56	..	2	36	6	..	..	++	103.0	Death
25	15	..	6	±	..	Herpes	.....	..	..	..	..	..	..	..	+	98.4	Death
46	15	..	6	..	..	Psychoneurosis	8,100	67	..	1	32	..	..	..	++	101.2	Death
47	..	..	6	..	..	Malignant endocarditis	.....	..	..	..	..	..	..	..	+	98.0	Death
43	20	..	6	..	..	Undetermined	29,200	91	..	..	9	..	..	..	+	101.0	Death
48	50	+++	5	..	..	Chronic arthritis	.....	..	..	..	..	..	..	..	+	98.0	Death
41	..	..	9	..	..	Neurasthenia	.....	..	..	..	..	..	..	..	+	103.0	Death

38. Herrick, W. W.: Extrameningeal Meningococcus Infection, Arch. Int. Med. **23**: 409 (April) 1919.
39. Liebermeister: Quoted by Litchfield (Footnote 24).

affinity for the meninges than ordinary clinical experience would suggest.

The tubercle bacillus and *Spirochaeta pallida* also readily pass the meningeal-choroidal barrier; less readily, *B. typhosus*, the influenza bacillus and the gonococcus, or their toxins.

Other pyogenic organisms than those mentioned—notably the streptococcus and staphylococcus—rarely penetrate the subarachnoid system, except by direct extension from some focus of suppuration immediately adjacent to the meninges. That the toxins of the streptococcus may have an effect on these structures is shown by the changes in the cerebrospinal fluid disclosed in the examples of sepsis studied in the series tabulated.

Of the more doubtful etiologic agents of infection, that of poliomyelitis penetrates the structures in question with the highest facility. The virus or toxins of scarlet fever, measles, parotitis, variola and epidemic influenza may give rise to reaction within the subarachnoid space. That many of these viruses are filtrable is perhaps not without significance. All this has diagnostic value, both positive and negative.

It is obvious that it is unsafe to rely too greatly on the presence of a slight or moderate increase in cells or globulin in the cerebrospinal fluid in the diagnosis of meningitis or poliomyelitis. The diagnosis of these serious infections from the mere presence of fever, meningismus and the spinal fluid findings mentioned is not justifiable. Abortive poliomyelitis is a dangerous diagnosis, and until the recognition of the etiologic agent has been placed on a basis useful clinically, had best be made with the greatest caution. Cases with less than 100 cells in the cerebrospinal fluid and without paralysis should be viewed with skepticism in the absence of very strong epidemiologic, clinical or immunologic evidence.

Of late, much has been said and written from a laboratory point of view of the dangers of lumbar puncture. After an experience with some 5,000 lumbar punctures in a large military medical center, in all sorts of medical conditions, we are not impressed with its clinical dangers. In none of the cases tabulated did true meningitis develop. Animal experiment has indicated possible dangers, under very special conditions, but its results cannot always be wisely translated bodily into terms of human pathology. Until convincing clinical proof is at hand, the skilled clinician need have no hesitation in removing from 5 to 8 c.c. of cerebrospinal fluid through a small needle, drop by drop. The removal of larger amounts, under any conditions, except for therapeutic purposes in meningitis, is unwise. The heightened pressure in the subarachnoid system in the early stage of so many infections may well be a protective reaction, and care must be taken not to reduce the pressure to a point which would promote undesirable filtration from the blood stream. There is clinical evidence at hand tending to show that the meningeal-choroidal complex consolidates its defenses after sepsis has existed for some time, and that the release of spinal fluid is fraught with less danger at a later than at an earlier period of sepsis.

CONCLUSIONS

1. A review of the literature and a personal study of seventy-six cases not resulting in meningitis show beyond question that the cerebrospinal fluid often gives evidence in increased pressure, pleocytosis and heightened globulin content of a reaction on the part of the leptomeninges to the infective agents or toxins of a large number of miscellaneous acute diseases, not ordinarily causing true meningitis.

2. These diseases are lobar and bronchopneumonia, influenza, tonsillitis, the exanthems, scarlet fever, measles, variola; herpes zoster, parotitis, typhoid fever, sepsis, arthritis, pleurisy, migraine, reaction to typhoid inoculation and others.

3. The cerebrospinal fluid shows variation from the normal in about one third of the cases studied.

4. Most, but by no means all, of the patients with subarachnoid reaction have clinical meningismus (meningitis serosa Dupré). On the other hand, many examples of meningismus are without pronounced changes in the cerebrospinal fluid.

5. The greatest caution should be used in making a diagnosis of meningitis or poliomyelitis from fever, meningismus and the changes in the cerebrospinal fluid mentioned. Cases with less than 100 cells should be viewed with skepticism, unless clinical, epidemiologic or other laboratory evidence is decisive.

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ABSTRACT OF DISCUSSION

Dr. Charles G. Kerley, New York: This paper is valuable in establishing something definite in our knowledge of the relation of pathogenesis to the cerebrospinal fluid. It was known there was an increased cell count and a positive globulin in pneumonia, scarlet fever and mumps. Knowledge in reference to the spinal fluid in many other conditions was very indefinite. The finding of a cell count of 172 in tonsillitis, of 200 in pneumonia, and of more than forty in a large number of other disorders must have a very direct clinical value. It was of great importance to know that there must be a much larger cell count than had hitherto been thought necessary before deciding that one was dealing with a particular disease. This knowledge would have been of the greatest value in the late epidemic of poliomyelitis when it was given out that a cell count of over ten established the diagnosis of poliomyelitis. A tonsillitis with a cell count of 173 would have landed the patient in a poliomyelitis hospital. There was no doubt that during the epidemic, many cases of poliomyelitis were wrongly diagnosed because of the lack of just such information as had been given by the authors.

Dr. Isaac A. Abt, Chicago: It seems to me that we have just begun to study the chemistry, the cytology, bacteriology, etc., of the cerebrospinal fluid. A vast field is opened up. There are vast possibilities, and a great deal is to be learned. I think that will possibly explain some of the difficulties which Dr. Kerley encountered with the various health boards. We have not said the last word about the cell content of cerebrospinal fluid in health or in disease, certainly not in disease. With reference to the meningism or the meningismus as spoken of here, we ought to define clearly in our minds what we mean so that we do not confuse it with an incipient or beginning meningitis. Many of us have seen cases which we can definitely say are cases of meningism. In typhoid fever, particularly, a child will start with meningeal symptoms lasting one, two or three days. The meningeal symptoms disappear, and the typhoid runs the usual course. The same is true of pneumonia. The doctors speak of these cases as apical pneumonia or meningeal pneumonia. They begin stormily with perfect meningeal symptoms. These symptoms soon subside, the pneumonia becomes more apparent in the lung, and the case runs the course of an ordinary pneumonia. In those older cases and in some of the more recent cases the spinal fluid presents some slight or insignificant changes but never the changes that occur in true meningitis.

Dr. Walter R. Ramsey, St. Paul: It has been shown that there is an increased intercranial pressure causing symptoms of meningitis, both where you find a real infection and

where you do not. Several years ago we had an epidemic of poliomyelitis in St. Paul and Minneapolis. I had just been abroad and they had had a big epidemic in Norway and Sweden. At first the doctors generally did not know what they had, and I remember reviewing and translating from the German an article by a Swedish physician, wherein he demonstrated and pointed out a variety of forms of poliomyelitis. One he designated as meningitis serosa. I remember in trying to diagnose these early cases we found one or two among a large number that manifested all the symptoms of meningitis with severe pressure, and after lumbar puncture the fluid removed was sterile and the symptoms disappeared at once. Whether that was one of the forms of poliomyelitis which gave pressure symptoms as the result of the irritation was a question; probably it was. The most practical point is this: they have demonstrated that in all sorts of diseases you may get this increased pressure. About two or three years ago I remember seeing a child who had measles and became quite convalescent from that but gradually went into a coma, manifesting all the symptoms of meningitis. I had no doubt that this was a case of tubercular meningitis. I did a lumbar puncture. The fluid was perfectly clear, and the next day gave no reaction of any kind. In two or three days that child was running about and had no other symptoms at all. Another child ate many green apples and then was ill for two or three days, going into a condition of coma. I had no doubt at that time that the boy had meningitis. To clear up the situation, I did a lumbar puncture, found a large amount of perfectly clear fluid which gave no reaction at all. The next day he went home. Those cases demonstrate that intercranial pressure may cause all the symptoms of meningitis which cannot be differentiated except by lumbar puncture.

DR. ALFRED F. HESS, New York: The most interesting part of this discussion has been the question of meningism. Dr. Josephine Neal, who is the head of the Bureau of Laboratories, Department of Health of New York City, in an examination of six or seven hundred cases of this kind, found that the cell count was normal in almost all the cases and that the chemical examination was almost normal. There are exceptions, one of which is when there have been convulsions, for instance, convulsions associated with whooping cough; another exception is when there has been some pyogenic infection with meningism, such as mastoiditis, and third, she found it true with the cases which are not acute and recent. If the case was chronic, if it had lasted a week or ten days, then the cell changes which Dr. Herrick described occurred. I think that these tables should be rearranged on the basis of the acute and the chronic cases.

DR. H. L. F. LOCKE, Hartford, Conn.: I was particularly interested in what has been said regarding meningismus or meningism. We found that in meningismus the cell changes were usually very minor, but that in cases where lumbar puncture was delayed for five, six or seven days, due to delay in diagnosis, there was usually a moderate increase in the number of cells and a slight increase in the amount of globulin. Where the punctures were made fairly early, we rarely found any changes in cases of meningismus. I believe the explanation, as Dr. Neal also believes, lies in the gradual development of cerebral congestion which causes an infiltration of cells into the spinal fluid and also delays normal absorption. The factor of time is most important. The longer these cases go on without puncture the more apt we are to find changes in the cerebrospinal fluid.

DR. HERMAN SCHWARZ, New York: During the poliomyelitis epidemic if 1916 and since that time we have taken every opportunity of puncturing in acute cases that had any resemblance at all to meningism or meningitis, and we have found regularly that when the fluid is examined immediately after puncturing the cell count is not increased, except when there is some definite lesion of the meninges or of the brain or cord. In a large group of cases of so-called meningism, the cell count was regularly below twenty. The count of 172 described in the paper as occurring in a case of tonsillitis is certainly very curious. I should like to see many more cases reported before quite overturning our idea that the cell count of fifty or sixty or more has not some real value in the diagnosis of an inflammatory condition of the nervous system. It might be of interest to report to you that in some studies of the sugar content of the spinal fluid, this substance was regularly increased in real inflammatory conditions of the spinal cord and meninges.

DR. FRITZ B. TALBOT, Boston: There is one point which has been brought out very clearly, and it is an important one. We should first study the normal before we study the pathologic. It is very encouraging to see so much normal data recorded and I hope this tendency will spread.

DR. W. R. SISSON, Boston: During the past year, in one of our southern camps, we have had an experience with spinal fluids similar to that which Dr. Herrick described. This was especially true during the epidemic of mumps. Many patients with this condition had a most fulminating type of infection and frequently manifested meningeal symptoms. Lumbar puncture was performed in most of these cases and a pleocytosis was almost invariably found. So frequent were these findings that we came to look on "mumps meningitis" as a not uncommon complication. I feel that if routine spinal punctures are performed on children with other acute infections we would find pathologic fluids even more often than Dr. Herrick has noted. It is interesting in this connection that one of the first types of cells we found in the spinal fluid, even before an actual invasion of the meninges has taken place, is the small mononuclear endothelial cell which is unquestionably a phagocyte.

DR. W. L. MOSS, Baltimore: I wish to ask Dr. Herrick if cultures were made from the spinal fluids which showed these rather remarkable increases in cell count. It seems probable that in many of the infections which we think of as local, a few organisms may get into the blood stream where they may not multiply or even persist very long or give rise to any very appreciable symptoms. If they reach the blood stream may they not sometimes reach the subarachnoid spaces? In support of this suggestion, I may refer to an experience in the A. E. F. during the early days of the influenza epidemic. At first some of us did not recognize the disease as influenza and in our efforts to make a diagnosis we made many blood cultures and a considerable number of lumbar punctures with cultures from the spinal fluid. Dr. Roger Kinnicutt and Dr. Carl A. L. Binger, working in Base Section No. 2, found meningococcus Type C (French classification) in a considerable number of cases, both in the blood stream and in the spinal fluid. In the complicated cases showing bronchopneumonia and in some of those which showed an exudate over the brain at necropsy these findings are not remarkable, but I wish especially to emphasize the fact that in some of the cases in the early part of the epidemic when the disease was commonly called "three day fever," before we recognized any complications and at a time when the mortality from the disease was nil, we occasionally found the meningococcus in the blood stream and in the spinal fluid. If meningeal symptoms were present in these cases, they did not reach the level of clinical manifestation. In the light of this experience, I suggest therefore, that micro-organisms may sometimes get into the blood stream and even into the spinal fluid without giving rise to clinical symptoms of septicemia or of meningitis, but may cause a reaction on the part of the meninges which would account for such cell counts as Dr. Herrick has reported.

DR. ARTHUR M. DANNENBERG, Philadelphia: As to Dr. Hess' question with regard to the cell counts of spinal fluids in acute infections taken at the onset of the disease and later on. In all these cases from which spinal fluid was obtained, lumbar puncture was made within from fifteen minutes to one hour after the patient was admitted to the hospital. This was an invariable rule. We did these lumbar punctures in order to make an early diagnosis of meningitis. Only after it was realized that we had this wealth of material did it occur to us to tabulate, correlate and present the results to you.

DR. W. W. HERRICK, New York. British and American physicians seem to be behind the French and Germans in recognizing that the cerebrospinal fluid of so-called meningismus

may show variations from the normal. The work of the latter shows definitely that in a variety of acute infections a positive reaction in the cerebrospinal fluid may be found. I want to say again that in only about 30 per cent. of the cases examined did we find this reaction, that the larger percentage of our cases with meningisms were without these changes in the cerebrospinal fluid. The cases were all acute and were examined early in the course of the disease. It may be of interest to add that the sequence of changes in the cerebrospinal fluid in meningococcus meningitis is as follows: Blood stream invasion, the appearance of isolated organisms in the fluid, globulin, then increase in cells, usually mononuclears at first, then polymorphonuclears and pus. The work of Dr. Levinson is important in pointing out the possibilities of detailed study of the physical and chemical properties of the cerebrospinal fluid. For practical clinical purposes, however, I believe we must still be largely dependent on the demonstration of the etiologic agent in the diagnosis of meningitis and allied conditions.

FAMILY DEGENERATION OF THE MACULA LUTEA *

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CHICAGO

In the American literature there has recently appeared the report of several cases of macular degeneration occurring in two or more members of the same childship, of a type originally described by R. D. Batten and subsequently by Stargardt, Jennings, Lutz, Darier and Pusey.

In all, nine families unquestionably suffering from this familial affection have been reported, the entire number of individual cases in these families totaling twenty-six.

The most striking feature of this disease is that it is familial; conformity to Bolling's law of heredity has been complete in all reported cases. The lesion is macular in the beginning and is rather closely confined throughout the course of the disease to this area and its immediate vicinity. Subjectively, this is evidenced by a central scotoma with no restriction of the peripheral field. The disease in all reported cases to date begins in early childhood; the fall in central vision is rather rapid to the point where reading is laborious. From the subjective standpoint it is slower from this point forward, and after reaching a certain grade may remain stationary for years. Blindness never supervenes. Mental deterioration does not occur. Those afflicted with it are of average intelligence and health, the only abnormal feature being the visual disturbance and the macular and perimacular lesion.

In view of the fact that the number of reported families afflicted with this disease is so small and that its status is still unsettled, I feel that it is not presumptious to present a family case and to analyze from the standpoint of classification previously reported cases.

The case I here present is of peculiar interest in that it is the first reported which departs from Bolling's law of heredity—it occurs in two generations. Moreover, the late onset in the father would make the classification of this case in its present category not only questionable, but wholly impossible, were it not for the fact that the history and findings in the daughter's case parallel the history and findings of all the typical cases reported.

* Read before the Section on Ophthalmology at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

REPORT OF CASE

History.—The family is one of intelligence and comfortable circumstances. The childship consists of two members, both girls—one 18, the other 10—the elder of whom, Antoinette, is affected. Born, Feb. 27, 1901, she saw perfectly as a child. She found no difficulty in seeing the blackboard from the rear seat in school or in reading her school books until reaching the seventh grade. While in the seventh grade, at the age of 12 or 13, vision began to fail. She first noticed that she was unable to see the blackboard work from the rear of the schoolroom. She was transferred to the front row and soon could not see well from this position. While she was in the eighth grade, the teachers began to demand that her eyes be examined. At present she can read the newspaper slowly—picking out the words—by holding the paper about 6 inches from her eyes. She says that it takes an hour to read a column of the newspaper. She began studying music six years ago (in 1912). Until three years ago she could see the notes with the music in its proper place on the piano. She now holds the sheet of music close to her eyes and memorizes it. She thinks her vision a little better than it used to be.

Her previous history contains nothing to attract attention. She had measles and whooping cough in childhood.

At present (February, 1919) she is not feeling up to par. Dr. John M. Lilly, whom she consulted, reports that she is somewhat anemic, has lost weight during the past few months, and is somewhat "run down." He attributes the condition to overwork at school. She is extremely ambitious to finish school, and under the visual handicap the work in third year high school is excessive. It has been her habit during the year to study until 11 p. m. and arise at 7. The Wassermann test has not been made.

Examination.—These are the salient features of the eye examination: Vision is 6/60 in each eye, scarcely improved by the correction of the low grade refractive error present. The visual fields show a relative negative scotoma at the center; the ophthalmoscope, a lesion at the macula.

Family History.—Cecelia, sister, aged 10, born, Oct. 14, 1908, is normal in all respects; vision 6/6 in each eye; fields normal; no fundus lesion. Examined in January, 1918.

W. H., the father of the foregoing childship, aged 43, was born in Posen, Feb. 14, 1876; Polish; no Jewish blood; one of a childship of six—four boys and two girls; no consanguinity in parents; father died at 40 plus of "paralysis of intestines;" not robust; had indigestion for years; the father's father died at 85; the mother died at 49 of pneumonia; she was not robust; she was confined to bed five or six months following one childbirth; the mother's mother died at 80 plus; the youngest sister died of tuberculosis of the cervical glands. The father can give no information as to the vision of the other members of his childship, as he came to America at the age of 19.

Until eight years prior to present examination he could read the finest print with ease. Suddenly, in 1911, his vision began to fail and fell rather rapidly to a point at which the recognition of faces was uncertain. Particularly annoying was his inability to read except by the greatest effort. He now reads the newspaper as he did when I first saw him two years ago (1916) by holding it about 8 inches from his eyes and looking through a small magnifying glass. He cannot note any change in his vision in recent years. It may be a little worse, but of this he is not certain.

His previous history, while of interest, is not illuminating. Nineteen years ago he began suffering with indigestion. Fourteen years ago he underwent an operation for appendicitis with no resulting benefit. Six years ago he consulted Dr. Charles Louis Mix, who, after exhaustive examination, discovered an ulcer of the duodenum. For the past five years he has lived on a diet of milk, cereals and eggs which has resulted in marked improvement.

PUBLISHED REPORTS OF CASES OF FAMILY DEGENERATION OF THE MACULA LUTEA

Year	Author and History	Childship			No. Affected			Age	Age at Onset	Eyes Affected	Vision	Refractive Error	Scotoma	Peripheral Fields	Fundus	Disk
		M	F	Total	M	F	Total									
1897	R. D. Batten[1] Syphilis in parents	2	1	3	2	0	2	..	About 14	Both	6/60	.....	Rel. cent. in case fields taken	Normal	Chorio-retinitis at macula	
1909	Stargardt[2] Family I: No consanguinity, inherited syphilis nor syphilis in parents; normal mentality	1	3	4	1	3	4	..	14 to 15½							
	Daughter	...	...	..	...	...	..	20	14	Both	4/30 and 8/30	H. 1 D.	R E=absolute cent. for g & r L E=central	Normal for white and color	Lesion at macula	Temporal white
	Son	...	...	..	...	...	..	17	15½	Both	8/35 and 8/25	H. astig.	Central for g & r	Normal	Lesion at macula	
	Daughter	...	...	..	...	...	..	15	.....	.....	8/15 and 8/10	E.	Central for g & r	Normal	Lesion at macula	
	Daughter	...	...	..	...	...	..	15	.....	.....	8/15 and 8/15	H. 2 D.	Central for g & r	Normal	Lesion at macula	
	Family II: No consanguinity, inherited syphilis nor syphilis in parents; healthy and intelligent	5	0	5	3	0	3	..	.....							
	Son	...	...	..	...	...	..	22								
	Son	...	...	..	...	...	..	20	12	Both	Fingers at 2 M.	M. 2 D.	Absolute central for g & r	Normal	Lesion at macula	Temporal white
	Son	...	...	..	...	...	..	18	13	.....	Fingers at 4 M.	M. 2 D.	Central for g & r	Normal	Lesion at macula	Temporal bleaching
	Son (twin) Twin, died at birth	...	...	..	...	...	..	15	10, parents think earlier	.....	3/35 and 3/50	M. 1 D.	Central for g-r & gray	Normal	Lesion at macula	
1909	Jennings[3] Consanguinity–Cousins	...	...	..	1	2	3	..	.....	.....	.....	.....	Central	Normal	Lesion at macula	Normal
	Rosa	...	...	..	...	...	..	21	.....	.....	10/200					
	Martha	...	...	..	...	...	..	19	.....	.....	20/200					
	Philip	...	...	..	...	...	..	17	.....	.....	16/200					
1911	Lutz[4] No consanguinity, inherited syphilis, tuberculosis nor trauma	3	6	9	0	4	4	..	10 to 12	Both	3/60 to 1/60	.....	.....	Normal		
1913	Stargardt[5]															
	A. S.	...	...	..	...	...	..	45	10	.....	Read at 20	.....	Absolute central	.....	.....	Dull
	E. S.	...	...	..	...	...	..	43	14	.....	.....	.....	Absolute central			
	K. S.	...	...	..	...	...	..	38	14	.....	F. at 25 cm. 1/60	.....	Absolute central			
1914	A. Darier[6] Family A: No inherited syphilis	...	...	5	0	2	2									
	Mme. J. A.	...	...	..	...	...	..	..	Child	Both	1/10 and 1/10	H. 1.50 D.	Central	.....	Lesion at macula	
	Mme. R. A.	...	...	..	...	...	..	..	.....	Both	1/10 and 1/50	.....	Central	.....	Lesion at macula	
	Family O: Jewish; no inherited syphilis	6	1	7	3	0	3									
	Chas. O.	...	...	..	...	...	..	38	7½	.....	1/10	.....	Central	.....	Lesion at macula	
	Leon O.	...	...	..	...	...	..	45	.....	.....	1/30 and 1/20	.....	Central	.....	Lesion at macula	
	Maurice O.	...	...	..	...	...	..	47	.....	.....	1/15 and 1/20	M. 1.50 D.	Central	.....	Macular lesion	
1915	Pusey[7] Arteriosclerosis	3	5	8	1	4	5						Absolute for red, relative for g & b			
	Mrs. H.	...	...	..	...	...	..	33	12	Both	6/60 and 6/60	M. 4.50 D.		Normal	Lesion at macula	Temporal pallor
	Brother	...	...	..	...	...	..	31								
	Sister	...	...	..	...	...	..	29	12	Both	.....	M. slightly	.....	.....	.....	Temporal pallor
	Sister, died at 10 mo.															
	Sister	...	...	..	...	...	..	25	12	.....	.....	Not. M.	.....	.....	.....	Normal
	Brother	...	...	..	...	...	..	22	11	.....	.....	Not. M.				
	Sister	...	...	..	...	...	..	19	12	.....	.....	Not. M.	.....	.....	.....	Normal
	Brother	...	...	..	...	...	..	15								
1919	Blue[8] No consanguinity; normal mentality															
	Father	4	2	6	1	0	6	43	35	Both	6/30 and 6/60	Astig. 1 D.	Relative for g & r	Normal	Lesion at macula	Temporal pallor
	Daughter	0	2	2	0	1	1	18	12	Both	6/60 and 6/60	Astig. 1 D.	Relative	.....	Lesion at macula	Normal

1. Batten, R. D.: Tr. Ophth. Soc. U. Kingdom, 17:48, 1897.
2. Stargardt: Arch. of Ophth., 71:534, 1909.
3. Jennings, J. E.: Am. J. Ophth., 26:296, 1909.
4. Lutz, A.: Klin. monatsbl. f. Augenh., 49:699, 1911.
5. Stargardt: Ztschr. f. Augenh., 30:95, 1913.
6. Darier, A.: Ophthalmoscope, 12:149, 1914.
7. Pusey, Brown: Tr. Am. Ophth. Soc., 1915, p. 364.
8. In this family, two generations were affected; in the other families, one.

The eye examination shows the following points of interest: vision, O. D. 6/30; O. S., 6/60; no material improvement by correcting the low grade refractive error present. The visual fields show relative negative scotomas at the centers. He is blind for green and red at the center. The peripheral fields are not contracted. The ophthalmoscope shows a lesion at the macula in each eye.

Mrs. W. H., mother of the foregoing childship, was born in Alsace-Lorraine in 1881. Her mother died at 80, her mother's mother at 76; her father at 80.

COMMENT

The literature covering this subject shows a tendency to consider only those cases typical of family degeneration of the macula lutea which conform to a rather restricted preconceived type. This conception is based on the reports of a relatively few individual cases and a still smaller number of family groups. We are, in truth, almost within the bounds of fact when we say that the present concept is based on the one family reported by R. D. Batten in 1897 and circumscribed by the opinion of Stargardt expressed on presenting two similar families in 1909. A further tendency to consider those cases atypical which do not conform rigidly to this concept is apparent.

On the other hand, there is apparent a strong tendency to broaden the classification to such an extent as to include such dissimilar conditions as amaurotic family idiocy, cerebral degeneration associated with macular lesions and the cases under discussion in a single clinical concept.

Now it seems to me that neither the one nor the other concept is logical under our present knowledge. But would it not be logical to broaden our concept of the disease to include the so-called atypical cases? Is it not apparent that a disease with a history so characteristic, with a lesion so definite, and a prognosis so certain merits consideration as a separate clinical entity? Other conditions may resemble this one in certain features which seem to bind them together into one group; but they differ so greatly in other points that plain lines of cleavage exist. Recognition of these lines of cleavage amounts practically to differentiating one clinical entity from others which resemble it in certain features.

To my mind the most potent argument for an inclusive classification is the fact that a familial factor is present in all the so-called types of the disease. The case presented introduces a hereditary factor. This basis for classification, however, is so broad that it is quite evident that its use would necessitate the inclusion of other and still more diverse conditions.

It is alluring to group together those conditions which show in common a lesion at the macula, particularly if they present other common characteristics or resemblances. This very natural tendency leads to the placing of too great emphasis on the location of the lesion as a binding factor. To guard against this tendency, careful consideration must be given to the anatomy of this region which makes it peculiarly vulnerable to pathologic processes and to the physiology which early throw these lesions into prominence. Diverse, indeed, are the known conditions producing lesions at the macula. So diverse are they that the term macular lesion has the same significance as the term corneal lesion—it locates the lesion.

From the unquestioned cases of symmetrical disease of the macula of R. D. Batten; symmetrical degeneration at the macula of Jennings; progressive familial macular degeneration of Stargardt, and family degeneration of the macula lutea of Pusey, the accompanying table has been compiled. In very few instances a perfectly obvious conclusion, though not mentioned in the text, has been incorporated. From the data supplied by these cases we may reconstruct our conception of family degeneration of the macula lutea to conform with all the features of the disease as amplified by constantly accumulating facts.

Family degeneration of the macula lutea is a disease of unknown etiology. It usually attacks several members of a single childship. The parents of the afflicted childship commonly show no abnormality of the eyes and are otherwise normal. It is unusual for it to affect more than one generation, but it may.

Both Jew and Gentile are attacked—the latter with much the greater frequency. Race cannot be said to be a positive factor in its occurrence.

Sex does not appear to play any considerable rôle in its occurrence. Of the total number of cases reported, more have been of the female sex than of the male. On the other hand, where the complete childships have been recorded there is a preponderance of females in these childships. In certain childships the males seem notably immune to the disease, and the females notably susceptible, making it difficult to escape the conviction that the female is more susceptible to the disease than the male. Statistics, however, do not admit of this conviction being recorded as a fact.

The disease is bilateral. It manifests itself between the ages of 7 and 35. The majority of cases develop between the ages of 10 and 14. The period of adolescence corresponds with the time in life during which the disease most frequently develops. The cases that develop before and after puberty differ in no way from those that develop during this epoch of life.

A slowly progressive course characterizes the disease. After the rather rapid initial onset, evinced by the comparatively rapid initial fall in vision, long periods of arrest may occur during which visual acuity remains stationary or is diminished by imperceptible gradations. It may finally progress to central, that is, macular, blindness. Here it halts. The periphery of the retina is spared. Blindness, idiocy and death do not occur.

Objectively, the findings are those characterizing a lesion at the macula lutea. Externally the eye appears normal. The pupils may be a trifle wide. They react to light and accommodation. But when the light is thrown directly on the macula, the pupillary reaction may be relatively sluggish. This lowered sensitiveness to light at the macula facilitates greatly the ophthalmoscopic examination of this portion of the fundus oculi. The objective findings are complete when a lesion at the macula and temporal pallor of the disk are observed and a central scotoma is demonstrated. In the beginning, the scotoma is relative; later, it may become absolute. Pallor of the temporal half of the disk depends on the completeness of the macular degeneration.

ABSTRACT OF DISCUSSION

Dr. Samuel D. Risley, Philadelphia: Since the cases discussed in this paper lie entirely outside of my personal experience, it is possible that I may have overlooked, or not recognized, the family character of certain macular diseases. I am not prepared to accept the hereditary aspects of this case without more elaborate study of the family conditions

even in the family of the patient whose case is presented. All of us have seen many examples of macular disease of various origins, and many times I have been unable to discover why the central blind spot existed. We see this in cases of strabismus, in which the strabismus is seemingly due to the apparent blind spot in one eye. I have oftener seen it monocular than binocular. Some years ago Dr. Adams called my attention to the fact, and subsequently published a paper in which he contended that these central blind spots are often associated with adenoids in the upper pharynx. He published quite a group of cases in which he had demonstrated the presence of the blind spot in children with large adenoids. It is not going far afield when we associate diseases in that locality with the sphenoid sinuses, and we all know the relation between the roof of the mouth and the optic nerve itself, which runs right over the roof of this sinus. In this way we may often account for the existence of the central blind spot. Until we have excluded the possibility of systemic origin in all these cases we should hesitate before placing these cases in the hereditary group. The fact that they have occurred in fathers and daughters may be incidental or coincidental, rather than hereditary. We must have a fair record before we include the case in the distinct type of family diseases.

DR. WILLIAM ZENTMAYER, Philadelphia: I have seen two cases of family blindness with macular changes, as to the proper classification of which I am in doubt. To bring all types of family disease presenting macular lesions into one class would be faulty because the macula and the macular fibers, by reason of their highly specialized function, fall within the Erdinger dictum, and are, in Dr. Blue's words, "particularly vulnerable to pathologic processes." Yet the difficulties in properly assigning a given case are evident. Certain groups of cases which resemble one another in their general symptomatology and course are in contrast as to ophthalmoscopic findings. This is true of juvenile amaurotic family idiocy and the type for which Clarke proposes the term macutocerebral degeneration. Other groups are allied ophthalmoscopically but differ in their general aspect, as, for example, the two forms of macular degeneration, one of which is associated with cerebral degeneration. Furthermore, Gifford states that Hiegene has recorded a family history in which one child had the Tay-Sach's type, another the Voigt type and the third the Stargardt-Batten type. According to Clark, who presented an admirable paper on macular degeneration with and without dementia, before this section last year, the first type differs from the second in that the onset occurs at, or about, the time of second dentition instead of at puberty. Cerebral changes begin at the same time as those in the macula, but there is a greater terminal impairment of vision. Ophthalmoscopically, the changes are identical but optic atrophy is more common in the type with dementia. Stargardt and Stock assume that in both types the degeneration, which Clark believes to be in the neuro-epithelium of the retina, is due to an autocytotoxin that has an affinity for the neuro-epithelium of the retina and in some cases for certain brain cells. In this connection it is of interest to note that Sajous believes the suprarenal secretion to be at fault and responsible for amaurotic family idiocy and evidence is accumulating which tends to substantiate Fisher's view that Leber's disease (hereditary optic nerve atrophy) is due to dyspituitarism. I recently saw, through the courtesy of Dr. Homer Rhoad of Reading, Pa., a family of three children, two of whom were either born blind or became so in the first months of life, while the third, a baby 2½ months of age, appeared to have but a slight amount of vision. They were all too young to permit of a thorough study of the ocular conditions or to determine their mentality. All three presented at the macula changes which, so far as could be determined, were not unlike the whitish areas of circinate retinitis, but bearing no likeness in the grouping of the lesions. The affected area seemed more or less oval and covered a surface several times the diameter of the disk. The disks were partly atrophic and the vessels were small and somewhat tortuous. There had been no inflammation in the eyes of any of the children, and there was no blindness in the families of either parents. The external appearances of the eyes were normal except for the searching movements of the globe. In January, 1917, I saw a boy, aged 9 years, and his sister, aged 10 years, both having very low visual acuity associated with retinal degeneration. There were grouped about the macula and along the course of the superior and inferior temporal arteries white or yellowish white disciform lesions, mostly discrete but sometimes confluent, varying in size from two to four times the diameter of the main trunk of the central artery of the retina. In the right eye of the boy the foveal lesions were somewhat pigmented. The children were healthy, well developed and mentally sound. The girl had a slightly positive Wassermann.

DR. MARCUS FEINGOLD, New Orleans: It is difficult to class one group of macular degeneration in any one of the several groups referred to here; but it has been an acknowledged fact, except in very rare instances, that macular degeneration will have more or less the same type in a given family. In the case reported the father was injured. He acquired the disease rather late in life, and at the same time the daughter acquired the disease early in life. In other words, while it is difficult to differentiate and define the different types of macular degeneration, we have in one family the two types of it, and it has appeared in two generations—an interesting fact. Next is the fact that we have no appearance of several members of the same childship, having the macular degeneration. This is a factor also which must be borne in mind if we are to consider these as macular degeneration.

The patients whose cases I reported three years ago are holding their own; the condition has deteriorated only in the most progressed case. No degeneration is evident except for some nervous symptoms.

DR. ROBERT BLUE, Chicago: I am aware of the unsettled condition of this question. I have expressed my personal opinions in the paper and will let it rest on its merits. In the father, the normal marks of the macula are found, while in the daughter they are obliterated. In the father they are pigmented, not around the borders of the lesion, but scattered through it. It can be described as a motheaten appearance. The lesions are not alike. I judge this from the pictures and the descriptions. The paper shows the lesions at various stages. My reason for not mentioning the lesions is that the appearance does not seem to be the same in the various descriptions, even though the histories are typical, and the discussion of that subject would have made too long a paper to present here.

UVEITIS

WITH SPECIAL REFERENCE TO THE ETIOLOGY AND TREATMENT IN THE CHRONIC AND MALIGNANT TYPES *

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Although much has been written on this subject in the last few years, and although many scientific investigations have been made as to etiology and numerous methods of treatment tried, unfortunately in many cases the cause or causes of the disease remain obscure, and the treatment unsatisfactory. In this country de Schweinitz, in particular, has given the subject of uveitis, in its various forms, much attention; he has made special investigations as to the etiology, and has by his many valuable contributions and discussions done much to clear up a complex problem. A valuable symposium on the subject of uveitis was presented before the Section on Ophthalmology of the American Medical Association in 1902, de Schweinitz, Woods, Friedenwald, Hansell, Wilder, Woodruff and

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Marple contributing.[1] Irons and Brown, Reber, Zentmayer, Frances, Bordley and Dwyer and others have made valuable contributions on the subject. In England, Stephenson, Mayo, Butler, Dunn, Campbell and others have contributed to the subject; while on the continent, among many contributions to this subject in the last few years, Elschnigs' papers, perhaps, have attracted most attention, because of the anaphylactic theory of sympathetic iridocyclitis which he also applies to nonsympathetic uveitis. Bordley's and Percy Dunn's contributions to this subject, wherein they lay stress on hypothyroidism as a factor in cases of iridocyclitis and uveitis, and dwell on the clinical value of the administration of thyroid extract in these cases, have not received so much attention, perhaps, as they deserve.

ETIOLOGY

Stephenson and de Schweinitz are of the opinion that most probably every case of uveitis (iridocyclitis) is of septic or toxic origin. In a general way, the causes of uveitis may be grouped under three headings: (1) those that are associated with or produced by infectious diseases, as syphilis, tuberculosis, gonorrhea, influenza and "rheumatism"; (2) those in which there is perverted metabolism, as in gout, arthritis (so-called uric acid diathesis), diabetes, nephritis, anemia and hyperthyroidism, and (3) those cases of autointoxication from focal infections, which may be situated in the gastro-intestinal tract, nasopharynx, nasal accessory sinuses, teeth and alveolar processes, tonsils, genito-urinary tract, or the skin.

CAUSES OF IRITIS IN ONE HUNDRED CASES

	Alone	With Other Infections	Total	Coincidental Infections						
				Syphilis	Gonorrhea	Urinary Ioels	Dental	Sinus	Tonsils	Genito-Tubercu-
Syphilis	10	13	23	..	8	5	5	1	1	..
Gonococcal infection	7	2	9	..	..	..	1	1	..	..
Tuberculosis	8	..	8	..	..	..	..	..	..	..
Dental infection	7	11	18	2	2	2	..	7	1	..
Tonsillar infection	7	9	16	1	3	2	7	..	..	..
Sinus infection	1	2	3	..	..	..	1	1	..	..
Genito-urinary (nonvener.)	3	..	3	..	..	..	..	..	..	..
Other infections	2	..	2	..	..	..	1	..	..	..
No cause found	1	..	1	..	..	..	..	..	..	..
Combined infections	..	..	17	8	9	7	8	13	5	1

In investigating the etiology of uveitis, it is interesting to compare the causes as given by the older writers with those given by men who have had the advantage and use of modern laboratory methods of investigation. In the good old days, syphilis and "rheumatism" held the leading rôles, while gout, malaria, diabetes, tuberculosis, scrofula, gonorrhea, etc., were given secondary consideration. Take in contrast the statistics of de Schweinitz, Reber, Irons and Brown, who have availed themselves of all the latest methods of investigation as to the etiologic factors in these cases. To begin with, an accurate history is taken; then a physical examination is made; and the roentgen ray and various laboratory tests, as the bacteriologic and serologic, are utilized to arrive at, if possible, an approximate cause of the eye trouble.

It is interesting to note the opinion expressed by the late Dr. Reber on the value of the older methods of ascertaining the etiologic factors in cases of uveitis. After reviewing the statistics of numerous authors, based on clinical findings, and noting the wide discrepancies therein, he came to the conclusion that these statistics amounted to "precisely nothing." While admitting the value of clinical findings and the history of the case, Reber strongly urged the use of modern laboratory methods, such as the complement fixation test, for detecting *Spirochaeta pallida*, gonococci, pneumococci, streptococci, the postinfluenzal group, staphylococci and *Bacillus coli*, the first five having been shown to have a causative effect in diseases of the iris.

Following the latest methods, Brown and Irons[2] reported 100 cases of iritis, the causative factors of which (traumatic cases excluded) are given in the accompanying table.

These authors found it not an easy task to treat these cases when the etiologic factors were multiple, as it proved difficult to decide which factor played the important part in causation. Knapp[3] cites Mayo to the effect that "there are three kinds of bacteria which usually cause cyclitis, and that these are usually present in the aqueous humor. Among thirty cases, he finds the tubercle bacillus in thirteen, the staphylococcus in ten, and the spirochete in five. He suggests as a routine method of examination, first, the Wassermann test, second, the von Pirquet test, then paracentesis and examination of the aqueous."

As to the uric acid diathesis; although laboratory methods have induced us to give up the blanket term "rheumatic" to cover a multitude of affections, and to substitute therefor "toxemic" or "autotoxemic," as suggested by Harrison Butler,[4] we cannot, as suggested by Knapp,[5] give up the rheumatic tendency entirely, and from a therapeutic standpoint the study of the eye patient's diathesis is of importance. Knapp also cites Girard to the effect that among the causes of eye diseases the arthritic diathesis occupies the first place; second, syphilis; third, tuberculosis; and de Schweinitz,[6] commenting on rheumatoid arthritis, says:

> In these polyarthritic conditions, the toxin, bacterial or metabolic, or the bacterial element itself comes, in all probability, in general terms, from the digestive system, beginning in the mouth, and including the pharynx, tonsils, intestines, etc. The patient begets uveitis or iridocyclitis, not because he is "rheumatic," but this is one of the manifestations of the toxemia or infection of which he is the subject, while his muscle, joint, and fibrous tissue pains and lesions are other manifestations of the same cause.

In regard to intestinal infections, Dwyer recently has called attention especially to the hyperacidity and hyperalkalinity of the intestinal contents as a factor in eye diseases, including chronic uveitis. He states that either hyperacidity or hyperalkalinity of the bowel contents in these cases destroys the colon bacillus; and at the same time he noted that in such specimens the indol and skatol content was high and that there was always a high percentage of indican in the urine. In such cases intestinal intoxication occurs, and eye affections may follow.

Elschnig has laid great stress on indican in the urine as an indicator of intestinal intoxication, but de Scweinitz has called attention to the fact that indicanuria is not a reliable test of intestinal toxemia; that, in

1. Printed as a monograph, American Medical Association Press, 1902, p. 91.

2. Brown, E. V. L., and Irons, E. E.: Tr. Am. Ophth. Soc. **14**: 495, Part 2, 1916.

3. Knapp in Pyle: System of Ophthalmic Practice, Medical Ophthalmology, p. 397.

4. Butler, T. H.: Brit. M. J. **1**: 573, 1912.

5. Knapp, Medical Ophthalmology, in Pyle: System of Ophthalmic Practice, p. 376.

6. De Schweinitz: Pathogenesis of Chronic Uveitis, Tr. Internat. Cong. Med., 1913.

fact, the patient may be toxemic without the presence of indican in the urine, and, vice versa, may not be toxemic though indican is present.

A final point in etiology to which I wish to call attention is that of hyperthyroidism, a factor perhaps which has not received sufficient notice. Dunn[7] calls attention to the influence of the thyroid gland in metabolic processes. He says:

> Metabolic processes as a whole depend on the controlling influence of the thyroid gland, and that owing to its extreme vascularity, the ciliary body is very responsive to blood changes. . . . There is the primary stage, represented by autointoxication, arising, as we may assume, in the intestines. To combat the toxemia, so called, the thyroid gland, through its secretion, is called on to make strenuous efforts under the influence of excessive stimulation. For a time these efforts are successful. Later on, however, the thyroid fails in its mission. Then follows the second stage, namely, hypothyroidism. With this begins a pervading uncontrolled toxemia. Accompanying this, and dependent on it, is the last stage—that of diminished resistance of the tissues, thus rendering them a prey to bacillary infection.

Dunn reports some remarkable cures from the administration of thyroid extract, and reaches this conclusion:

> The main purport of this paper is to lay stress on hypothyroidism as a causative factor in cases of iridocyclitis and on the usefulness, clinically, of its recognition. That the ciliary body, so sensitive to toxemic influence, should readily respond to thyroid treatment is a natural sequence to the vascularity of its structure. Thus is placed in the hands of the ophthalmic surgeon a means of relief, yielding results which can be obtained in no other way. The dose of the extract employed by me for children beyond 5 years of age and for adults is 3 grains twice daily, and from this dosage I have never seen any ill effects.

In a second communication on the same subject, Dunn[8] adds further evidence of the value of thyroid extract in the treatment of deep-seated eye affections.

James Bordley, Jr., of Baltimore has made two communications on the value of thyroid extract in the treatment of malignant uveitis, and has reported seven cases. In four out of five cases,[9] first reported in 1915, the patients are entirely well[10] without return of symptoms to June, 1916, and in the last two cases reported the patients have been entirely relieved of all symptoms of inflammation. Bordley states that he does not claim that thyroid extract is a panacea for all types of malignant uveitis or, indeed, for any special type, and says further that it will take treatment of many cases to prove its usefulness. It is his opinion that, uveitis being due to an infection and the eye not having sufficient defensive power to protect itself, thyroid extract furnishes the offensive energy, and in this way, a cure is brought about. Bordley gave 2½ grains of iodothyrin from one to three times a day.

TREATMENT

The foundation of all treatment, of course, rests on finding the cause and if possible removing it. However, as Bordley states relative to malignant uveitis, it must be remembered that the mere finding of a focus is not proof of its causative relation, and that malignant uveitis once established becomes an entity and not a symptom. It goes without saying that in all doubtful cases the Wassermann and tuberculin tests should be made. In syphilitic and tuberculous cases, the indication for treatment is plain, and intensive treatment should be used. In those cases due to focal intestinal intoxication, the services of an internist must be utilized and laboratory methods employed to get at the underlying cause. De Schweinitz[11] has reported a series of such cases. Lately, Dwyer has made some investigations in cases due to intestinal intoxication, especially in reference to the part the colon bacillus played in these cases. Dwyer found that in many cases of deep-seated eye infection, including intractable uveitis, the colon bacillus was absent, owing to a hyperacid or a hyperalkaline condition of the bowel contents, the colon bacillus not being able to survive in either condition. Dwyer's method of treatment[12] in such cases is briefly as follows:

> In the highly acid specimens, an endeavor was made to alkalize the contents by the use of irrigations of a 1 per cent. sodium carbonate solution and then to practice colon transplantation in order to approach the normal. At the same time the patients were put on rather free diet, cutting out those foods that were completely assimilated, such as meat. In other words, the tolerance for the three fundamental foods was established as far as possible. In the highly alkaline specimens, irrigations with lactose were given and then the colon bacillus was transplanted. At the same time the Bulgarian bacilli were given by mouth, the whole idea being to approach the average normal. Lactose was also administered by mouth in such cases to provide a suitable pabulum for the colon bacilli.

Dwyer reports some remarkable cures when all other treatment had failed.

But even with the removal of foci of infection and elimination of toxemic conditions in the alimentary tract, the arrest or cure in many of the chronic and malignant cases of uveitis is not to be had. It is in this type of case, when other methods have failed, that Bordley and Dunn call into use thyroid extract. Although my own experience with the use of thyroid extract in these cases is very limited (being confined to two cases) and not of happy result in either, from the reports of Bordley and Dunn I think the method should be thoroughly tried out. Even the cure of *one* such case would justify its trial in many cases.

REPORT OF CASE

By way of foreword, I may say that the following complement fixation tests were made: 1. Wassermann, for *Spirochaeta pallida*, several times, always negative. Spinal puncture was not made, as the patient refused it. 2. For gonococci; negative. 3. For staphylococci; negative. 4. For streptococci; positive for the viridans type. Also examination for the presence of colon bacilli was made, their absence noted, and appropriate treatment given after the method suggested by Dwyer.

History.—S. J. D., man, aged 38, consulted me first, May 13, 1910, for an acute iritis in the right eye, which was of one week's duration when he came under my observation. I found the pupil contracted and somewhat irregular, the iris muddy and edematous in appearance, but only with a slight exudate present; the anterior chamber was deep, and the aqueous hazy; there were marked circumcorneal injection and redness, and great pain and photophobia. The patient's father died at the age of 74 years, of cancer; his mother died at the age of 50, of Bright's disease; one brother, older than himself,

7. Dunn, Percy: Some Aspects of the Ciliary Body in Health and Disease, Lancet **1**: 1129 (May 29) 1915.
8. Dunn, Percy: Brit. J. Ophth., January, 1919.
9. These cases were presented before the American Ophthalmological Society in 1915.
10. Bordley, James, Jr.: Thyroid Extract in the Treatment of Malignant Uveitis, J. A. M. A. **67**: 412 (Aug. 5) 1916.
11. De Schweinitz: Pathogenesis of Chronic Uveitis, Tr. Internat. Cong. Med., London, 1913.
12. Dwyer, J. G.: Focal Infections of the Eye from the Intestinal Tract, J. A. M. A. **71**: 2046 (Dec. 21) 1918.

died of Bright's disease, at the age of 36; he had also suffered with "rheumatism," and had had one attack of iritis one year before his death; another brother and sister were in good health; the patient himself, though not robust, had enjoyed good health, never having had any serious illness.

There were no symptoms of syphilis, unless the inflamed eye should be so considered. Many subsequent Wassermann tests have all proved negative; the patient had had two attacks of gonorrhea, but was apparently entirely cured of this, and subsequent complement fixation tests have proved negative. Roentgenographic tests of the sinuses have shown them to be entirely normal until recently; urinary tests proved negative, except for excess of indican, now and again.

In the last eight years that the patient has been under my observation, he has had ten attacks of iritis, first in one eye and then in the other, until this last attack, when both eyes were involved, the right eye, first, in November, 1917, which still continues, and the left, May 10, 1918, acutely following injections of *Streptococcus viridans*. The shortest attack lasted ten days, and the longest, eight weeks, previous to the present one, which has now lasted for sixteen months, the whole uveal tract becoming involved. All former attacks of iritis yielded to the usual local treatment of atropin, ethylmorphin hydrochlorid (dionin), hot fomentations, leeches, etc., and to antirheumatics given in full doses, both by mouth, and by rectum in mucilaginous suspension. The patient has been to the hot baths in Michigan several times, and once to Arkansas. In 1913, while taking the baths in Michigan for an attack of iritis, in the fifth week of his stay he developed an acute arthritis in his left knee, the knee swelling to almost double the usual size, and it has remained in this condition, since, except for short intervals, though he has had hot air baths, and all other approved and nonapproved antirheumatic treatment for the condition. In 1917, following the removal of submerged tonsils by my brother, Dr. George E. Davis, the swelling of the knee almost completely subsided within forty-eight hours, but inside of ten days, the swelling returned, and so remains. I may say also, in this connection, that *Streptococcus viridans* injections have caused acute swelling in the knee, and rendered it painful.

Treatment and Course.—Diagnostic tuberculin tests proved negative, both for the von Pirquet and subcutaneous injections of the O. T. solution, though the latter were carried up to 5 mg. These tests were repeated after a year's interval, and were again negative. In January, 1918, examination of the bowel contents detected the absence of colon bacilli. The reactions in this case were alkaline. After due preparation, these beneficent bacilli were reimplanted, locally, and also the Bulgarian bacilli were given by the mouth, and proper diet instituted, but all without benefit to the patient.

As it was not known what else to do, and as other treatment failed to give relief, for diagnostic purposes a course of mercurial inunctions combined with pilocarpin sweats was given for a period of four weeks, but without improvement of the condition.

The history concerning the teeth is of particular interest in this case as a possible etiologic factor. The patient, when 15 years of age, had a swelling about a capped lower molar tooth on the right side. This swelling lasted two years, and subsided without treatment. In 1912, after the patient had had two attacks of iritis, an abscess formed around this capped tooth, and the tooth was removed with a portion of the alveolar process. The patient had no other trouble with the teeth until 1917, when he had one lower molar on the left side removed. In the fall of 1918, after consulting two competent roentgenologists, one of whom pronounced the teeth all right but the other pronounced them diseased, the patient had two right upper molars, and one left lower molar removed, and also a small piece of the root from the site of the right lower molar which had been removed six years previously, on account of abscess. *Streptococcus viridans* was found, and autogenous vaccine was given biweekly, beginning with an initial dose of 2,500,000,000 and carried up to 8,000,000,000. After these injections, the right eye had slight reaction, followed by some clearing; following the ninth injection, there was slight circumcorneal flushing in the left eye, which had been quiet, and after the tenth injection, a decided reaction followed, with redness, pain, photophobia and lacrimation; and in two days, a very severe iritis developed in the left eye. The right eye had also become slightly worse, and injections were discontinued for one week, and then begun with the same size dose as the tenth injection, which apparently had little effect on the eyes, one way or the other. Altogether, forty-three of the streptococci injections were given, the last dose, as stated above, being 8,000,000,000, but without improvement.

The patient was then put on thyroid extract (Rogers residue[13]), 3 minims five times a day, for several weeks, but without improvement. A second series of injections of *Streptococcus viridans* was given biweekly, being rapidly increased until 40,000,000,000 were given at a single dose (Dr. John H. Richards gave these injections); but as the patient did not improve, the injections were given up altogether.

Roentgenoscopy of the sinuses seemed to show some sphenoidal involvement, and accordingly, March 12, 1919, Dr. E. R. Faulkner opened up and drained these cells, a submucous resection of the nasal septum being done as a part of the operation. The operation showed signs of an old cicatrization, parts of the bone being ivory hard. There was but slight reaction from the operation, and what effect it will have on the patient's condition is a matter of speculation.

The present condition of the patient's eyes is: R. V., 5/200 not imp. L. V., 4/200 not imp. Almost complete posterior synechiae of the iris to the lenses, incipient cataract with the vitreous full of floating membranes in each eye. Deposits on Descemet's membrane, T. 12 mg. each. I may say that at no time, even in the attacks of iritis, has there ever been a plus tension. The fields of vision remained normal until the vision was markedly reduced, when peripheral contraction was manifest to a slight degree.

The patient has a marked arthritis in each knee which has not been improved by any treatment, and altogether he is in a bad way, both as regards his eyes and his joints.

ABSTRACT OF DISCUSSION

Dr. George S. de Schweinitz, Philadelphia: The advance made in the management of these cases depends on the widely accepted statement that practically all cases of uveitis are of septic or toxic origin. Second, it depends on the recognition of the fact that uveitis must be considered as a complication. And in the third place, in the management of these cases, we have learned that the finding of one source of focal infection does not necessarily mean that we have found the cause in its entirety. In other words, the toxemia may come from several sources. These various sources we ordinarily call the areas of focal infection, or sepsis, and those most in our mind are in the tonsils, intestines and teeth, or more accurately, the buccal mucous membrane. The relation of the teeth to the eye has been recognized for years. Forty years ago Nettleship reported the relationship between various teeth and choroiditis. Seven years ago I sent out 700 questionnaires to Americans and Canadians on this subject. Of 100 replies seventy-four were available and among these only nine surgeons reported a relationship between infected teeth and uveitis. Next year Mr. Lang reported 215 cases, with 139 attributed to tooth infection. I think we have learned, too, that extensive tooth infection is not at all necessary, and that the smallest blind abscess is liable to be the seat of infection. In like manner the so-called innocent tonsil is often a virulent source of danger. I wish to emphasize the importance of buccal sepsis in its relation to uveitis, and to call attention not only to ordinary pyorrhea alveolaris, but to "blind abscesses," apical abscesses, in devitalized teeth, and to the fact that no dental examination is complete without roentgen-ray examination. I would urge insistent exploration of the tonsils, even though they are innocent looking. I shall not discuss the treatment from the medicinal, dietetic and vaccine standpoints; it is well

13. Rogers residue is that which remains from the thyroid gland after acetic acid has been added and the proteins have been extracted. The residue is a liquid and supposedly nontoxic. Three minims of this were given five times a day.

known. But I urge the importance, in addition to these measures, of repeated paracentesis of the anterior chamber in uveitis, especially where there is rise of intra-ocular pressure—a not infrequent complication. Naturally, the fluid obtained should be examined bacteriologically.

DR. E. L. JONES, Cumberland, Md.: I have seen results in uveitis, which I believe indicate that we are on a trail that in some cases at least will lead to better results than we could obtain heretofore. The etiology of this affection has been said to be due to infections, syphilis, faulty metabolism, etc. But many causes combine in some cases. The effect of infections, syphilis and faulty metabolism is strong to disorganize the ductless glands; therefore we supply thyroids in addition to the other treatment. It enables antisyphilitic treatment to cure when that treatment alone would not cure; and so with infections and faulty metabolism.

DR. A. EDWARD DAVIS, New York: The point Dr. Jones made has been brought out also by Dr. Dunn, that even in specific cases there is always something beyond, and that by giving attention to this, using thyroid extract, as he has, we secure results not obtainable before.

EXPERIENCE OF AN AREA CONSULTANT IN FACIAL SURGERY

IN THE ZONE OF ADVANCE *

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The work of the maxillofacial service began properly with the mobile and evacuation hospitals, and in both the zone of advance and the hospitals of the advanced section, the work of our department was largely one of prevention. We had to deal with all injuries of the face and neck, exclusive of brain injuries. Those injuries involving the eye, the nose and the ear which did not involve other parts of the face came directly under their respective departments; but as these injuries were almost invariably associated with injuries of other parts of the face, most of them came directly under the care of the maxillofacial department.

It was the original plan to have installed in each mobile, evacuation and base hospital a maxillofacial team, composed of a surgeon who had had some special training in this class of work, a surgical assistant and a dentist. The surgeon was to be the head of the team. The dentist was expected to do the splinting or wiring of the jaws, working in cooperation with the surgeon. With this in view, several schools in this country had given special oral and plastic courses to surgeons and dentists, to prepare them in sufficient numbers for the work. Unfortunately, however, this plan was not practicable, not because of the shortage of surgeons and dentists in our army, but because they could not be transferred abroad in sufficient numbers. Another reason was that it was not always possible to have the cases properly classified in the triage and sent to special teams. So a compromise plan was adopted. A dentist was secured for each hospital, and it was arranged that he be called to assist the general surgeon to whose table the case happened to go, in caring for all jaw fractures. By this plan, the dentist was on call twenty-four hours a day, and often had to work steadily during the entire period.

The care of soft parts and the general supervision of the case devolved on the general surgeon, who spent most of his time at general surgical work and who often had had no special training for the maxillofacial work. This was not the ideal plan, but it produced some very good results, and seems to have been the best one possible under the circumstances.

For the guidance of surgeons and dentists in caring for maxillofacial cases, the chief surgeon, A. E. F., on the recommendation of the chief consultant in maxillofacial surgery, issued some bulletins of instruction.

The essential features of these bulletins were as follows:

1. All maxillofacial wounds shall undergo thorough mechanical cleansing.
2. There shall be no débridement of face injuries.
3. No bone fragment having any soft tissue attachment shall be removed.
4. Immediate steps shall be taken to arrest hemorrhage, and to prevent secondary hemorrhage.
5. There shall be immediate fixation of all jaw fractures.
6. Adequate inferior drainage shall be established in all fracture cases.
7. As much primary suture of face tissues shall be done as is consistent with good surgical principles.
8. Cases shall be evacuated to the base hospitals as quickly as possible.

It will be seen that in several respects these instructions ran counter to those that were sent out for the guidance of general surgeons in the handling of war wounds. One of the first requirements of these general instructions was that there should be a thorough débridement of all gunshot injuries. The second was that there should be no primary suture of these cases. This was essential and well advised in the handling of general surgical cases. The danger of general infection, and particularly the danger of infection from the gas bacillus, required that all gunshot wounds should be thoroughly debrided, particularly shell, shrapnel and hand grenade injuries. In the handling of face cases there were two reasons why we should not follow these general rules: In the first place, thorough débridement of all face injuries would have meant the sacrifice of an immense amount of facial tissue which never could have been adequately replaced, and which, if removed, would have necessitated a great amount of unsatisfactory secondary plastic surgery. In the second place, it was shown that there was practically no danger from gas infection in face wounds, no case to my knowledge having been reported.

By thorough mechanical cleansing of the soft tissues and careful suture of these shreds of skin and mucosa into their normal position, much tissue was saved which, otherwise, would have roped up into hard scar tissue and have been absolutely useless in the reconstruction of the face.

As was to be expected, much of this primary suture broke down, but even in these cases, no damage was done by the suture, and the tissues had been brought into some semblance, at least, of their normal position, which they retained to a greater or less extent.

Bone fragments, with some soft tissue attachment, were retained to serve as grafts from which new bridges of bone were to be regenerated. Many of these were lost, of course, but in a good percentage of cases, they served their purpose admirably, and no damage resulted from their retention.

In the matter of fixation of the jaws, it was necessary to allow the dentist considerable latitude for the

* Read before the Section on Stomatology at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

exercise of his own skill and judgment. Materials for this purpose were very scarce, and the dental men were often forced to resort to extremely crude methods. A great deal of ingenuity was evidenced by many of these men, and some excellent results were obtained.

An open bite emergency splint had been devised and was eventually supplied to the advanced hospitals. This consisted of double trays of aluminum filled with modeling compound. The jaws were to be put in the best possible position, the modeling compound softened in hot water, the splint placed in the mouth, the teeth pressed into this softened compound, and the jaws held in that position until the compound hardened. A chin cup and bandage completed the work. This was intended to serve only until the patient reached the base hospital, where permanent splinting could be done. Some of these splints were used with good results. In many cases, however, they were not found practical, and some other method was used. Probably the most common form of fixation used at the front, and one which gave very good results, was that of interdental and intermaxillary wiring. Villain's anchorages were used in a few cases. Arches of heavy silver wire, with interdental wiring, were also used. A few men made swedged splints, and one or two made some cast silver splints, using for this purpose the crudest sort of home-made casting apparatus. As silver and aluminum were hard to get, some of our dentists used franc pieces from their own pockets for this purpose. Block tin was also used in some cases and made very good splints. The ingenuity of the American dentist is such that he can be trusted to find some way out of almost any difficulty, and the lack of equipment and materials never daunted him. In the preparation for another war, should such a misfortune befall us, I have no doubt that some standardized method of procedure will be adopted and carried out; but should we ever be caught again as unprepared as we were this time, it is very comforting to know that we have dental men who can be depended on to meet the emergency as efficiently as they did in France during the later months of the war.

Too much cannot be said of the work done by the dental men in the advanced hospitals, and there is no doubt that much subsequent bone grafting of ununited fractures has been prevented by the early and efficient fixation secured by these men.

As these cases had to be evacuated very quickly, only the most temporary measures could be instituted. We had to depend on the base hospital staffs for the more permanent appliances to the jaw and for the real plastic work.

The arrest of primary hemorrhage was often a difficult matter, and taxed the ability of the surgeon to the utmost. Concealtd hemorrhage from a mouth, very much swollen, made its control a very perplexing problem. Ligation of the common carotid was found necessary in a few cases. The prevention of secondary hemorrhage resolved itself largely into a question of the prevention of sepsis. Adequate inferior drainage in fractures of the mandible went far toward controlling the sepsis that almost invariably followed these injuries. This was secured by making a free opening below the border of the mandible at the site of the fracture. In the fractures of the maxilla, the wound itself almost always provided inferior drainage—either externally or into the mouth.

As the consultant in maxillofacial surgery for the advanced section and zone of advance, it was my duty to organize our forces and resources for the accomplishment of our aims. Our forces in surgeons and dentists were meager, and our resources in materials were still less. On my first visit to the advanced hospitals I found practically no plastic surgeons, only a limited number of dentists, and no equipment for caring for face cases. It was necessary to secure dentists to supply the hosptials that were without them. This was done through the chief dental surgeon of the A. E. F. Directors of surgery and commanding officers of hospitals had to be shown the necessity of having some systematized plan of handling our cases. They had to be convinced of the wisdom of the maxillofacial rules of treatment, and as these differed essentially from those governing other cases, this was no mean task. It was only with difficulty that many of them were induced to consent to calling in the dentist to help splint jaw cases, but it was very gratifying on later visits to find dentists and surgeons working in close cooperation. The securing of materials with which to do our splinting was a hard problem. Modeling compound, ligature wire, heavy silver wire for arches, emergency splints, silver, aluminum, silver solder—these and many other things very necessary for the proper splinting of bad fractures, had to be obtained wherever and however we could, and they had to be taken to the men in the hospitals, so that the consultant reminded himself oftentimes of a sample man for a drug or instrument house. It was a part of the consultant's job to gather ideas from all sources, and to impart them to others. It was a work of education of the consultant and by the consultant.

After seeing the work in British and French hospitals, later in our own hospitals in France and now in our reconstruction hospitals at home, where I am now seeing many of the same cases that it was my fortune to see in France, I am convinced of the wisdom of the original plan of work and the rules laid down for the guidance of surgeons and dentists in the treatment of maxillofacial injuries.

The Prevention of Blindness.—The fourth annual report (1918) of the National Committee for the Prevention of Blindness is devoted largely to ophthalmia neonatorum. Since reporting is still defective, new cases of blindness from ophthalmia neonatorum can be determined only after the children enter schools for the blind. From this source it is found that 614 new pupils were enrolled in 1917-1918 in forty schools for the blind, and of this number, ninety, or 14.7 per cent., had become blind through the disease named. In 1917 the percentage reported was 18.4, and the year before that, 19. In 1915 it was 15.1. The percentage reported in 1918 is the smallest, therefore, since statistics were gathered. In the forty-one schools for the blind reporting on the subject, there were enrolled in 1917-1918, 4,109 pupils, and of these, 937, or 22.8 per cent., became blind through ophthalmia neonatorum, a decrease since 1907, when it was nearly 30 per cent. Massachusetts had the first organized class, and ten are now being conducted for the benefit of children who would otherwise be a neglected group in the school system. Virginia, Louisiana and Georgia in 1918 enacted laws for preventing blindness by ophthalmia neonatorum, and Kentucky and Rhode Island passed laws on other phases of the committee's work. Twenty-four states have carried forward prevention of blindness work. The report, in addition to the detailed reports of Edward M. Van Cleve, managing director, and Winnifred Hathaway, secretary, gives many other details of the activities of the committee during the year. The headquarters of the committee is at 130 East Twenty-Second Street, New York.

RECONSTRUCTION WORK IN WAR INJURIES OF THE FACE AND JAWS*

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As has been pointed out many times before, the successful treatment of maxillofacial injuries depends on teamwork between the surgeon, the dental surgeon and the dental prosthetist. We desire to outline the practical application of this cooperation at the Walter Reed General Hospital.

Fig. 1 (Case 1).—Wound received, Sept. 26, 1918. Depressed scar, left side of chin and angle of mouth.

Fig. 2 (Case 1).—Appearance of patient, May 10, 1919, plastic operations performed April 2 and April 11, 1919.

The patients arriving from overseas belong, in general, to the following groups:

1. Compound comminuted fracture of the mandible in process of consolidation. These may or may not have been splinted before arrival, and require observation until union is complete.

2. Compound comminuted fracture with delay in union and healing of the soft parts due to the presence of sequestrums, infected teeth in or near the line of fracture, foreign bodies, etc. These require incision and drainage, removal of sequestrums, teeth, foreign bodies, etc., and general treatment of sepsis, in addition to splinting.

Fig. 3 (Case 1).—Temporary appliance attached to lower teeth to hold mass of modeling compound covered with epidermic graft to restore buccal sulcus.

3. Ununited fracture with loss of substance. In many of these cases the tissues have been healed for some time, and there is evidence that union is not going to take place spontaneously. These require bone grafting. In others, when the nonunion is due to infection or lack of fixation, the application of splints and removal of all sources of infection will often result in new bone formation and eventual solid union.

4. Healed scars involving the soft tissues alone, requiring plastic operation, excision of scar tissue and obliteration of the deformity by flap sliding, fat transplantation, etc.

Fig. 4 (Case 1).—Permanent denture with vulcanite pad passing down into restored sulcus.

5. Fractures associated with more or less extensive destruction or laceration of the soft tissues of the cheek, lips or chin. These, of course, require fixation of the fracture and correction of the soft tissue deformity (Figs. 5 and 6). Frequently the upper and lower buccal and labial sulci are partially obliterated by adhesions of the mucous membrane to the bone. These are best treated by division of the bands of scar tissue and the covering of the raw surfaces with epidermic grafts placed on modeling compound inlays attached to prosthetic appliances. Many of these injuries are accompanied by trismus, which requires treatment by jaw stretching and other measures.

6. Cases presenting perforation of the hard palate or having openings between the buccal cavity and the maxillary sinus, requiring operative or prosthetic closure.

Fig. 5 (Case 2). — Gunshot wound received, Sept. 29, 1918. Keloid scar of chin.

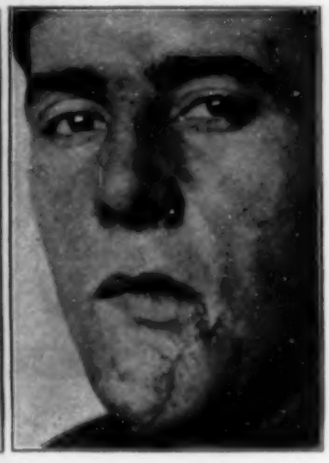

Fig. 6 (Case 2).—Appearance of patient after plastic operation, performed April 9, 1919. Scar tissue excised, and raw surface covered with pedicle flap from neck.

7. Miscellaneous cases of injury of the nose, orbit, external ear, etc., requiring plastic operation.

In every case a thorough survey of the mouth is made, clinically and roentgenographically, to eliminate any factors that may be keeping up infection. All teeth in or near the fracture lines are extracted, bone cavities drained, and sequestrums and foreign bodies

* From the Walter Reed General Hospital.
* Read before the Section on Stomatology at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

removed. The splints employed in fixation of fractures are as simple as the nature of the case will permit. For many of the uncomplicated cases with many teeth and good occlusion, in which maintenance of reduction is easy, intermaxillary wiring of the teeth has proved efficient. For the majority of cases we employ the cast silver cap splint. When there are firm teeth on both sides of the fracture it may be necessary to splint only the lower jaw, thus permitting mastication. For other cases the upper and lower teeth are splinted separately, the two splints being locked together in occlusion with a removable bolt on each side. While we can conceive of the advantage of early application of open bite splints in certain cases coming to us late with trismus, we have rarely seen a case in which the late application of the open bite splint would have any particular advantage over the closed bite splint. Especially is this true in early and late cases in which the patient has no teeth in the posterior fragment and in which the use of the open bite splint may result in union in malposition. For these fractures in or near the angle, particularly when ununited, preparatory to bone grafting, it is frequently necessary to prepare a saddle extension to cover the anterior surface of the ramus (Fig. 14). By means of a screw rod running from the upper splint to the saddle at an angle of 45 degrees to the line of the upper teeth, backward propulsion of the ramus may be brought about. In this backward propulsion, as the ramus rotates on the condyle, the change of position is accommodated for by a compensating hinge connection of the screw rod with the saddle. The saddle is made of vulcanite lined with a layer of velum rubber.

Fig. 7 (Case 3).—Wound received, Oct. 4, 1918. Depressed scar, right cheek.

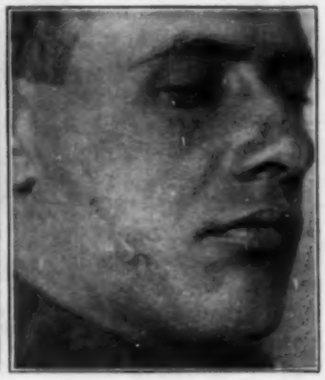

Fig. 8 (Case 3).—Appearance of patient after operation, performed April 11, 1919. Scar tissue excised, edges of wound undermined, and free abdominal fat transplanted to fill in defect.

Various other mechanical appliances are invaluable as supports in plastic operations. Attachments are made to vulcanite plates and splints for holding modeling composition plumpers to bring out the lips to their normal contour and to form supports for epidermic grafts to replace mucous membrane on raw surfaces of the mouth (Figs. 3 and 4). External and internal nose conformers may be attached to the upper denture, as supports in nose plastics. Cheek supports held in this way are generally more satisfactory than those depending on the head band.

Fig. 9 (Case 4).—Wound received, Oct. 1, 1918. Ununited fracture, left body of mandible, 2 cm. loss of substance.

Fig. 10 (Case 4).—Loss of substance as result of wound.

Fig. 11 (Case 4).—Pedicle bone graft, performed March 26, 1919. Examination, June 16, 1919, after removal of splint, shows perfect union.

Two methods of bone grafting have been employed. In two cases of ununited fracture of the body of the mandible with loss of substance of not more than 3 cm., we have used the method of Cole, removing a piece of the lower border of the anterior fragment, with a pedicle of muscle and fascia attached to it below for nourishment, sliding it back to fill the gap, and

attaching it to the ends of the fragments by means of silver wire (Figs. 9, 10 and 11). Most of our cases have been unsuitable for Cole's method, either being too extensive, or situated at or behind the angle. In one case there was a defect of 10 cm. In the cases of the eight remaining patients operated on so far, we have employed the osteoperiosteal method of Delagenière. This consists of first exposing the ends of the fragments and preparing a pocket beneath and over each by stripping back the periosteum and soft tissue for a distance of about 1 cm. The graft is made by the removal of a thin shaving from the antero-internal surface of the tibia with a chisel, leaving the overlying periosteum attached. One piece of this is inserted in the pockets under the ends of the fragments and another over the fragments, with the bony surfaces of the grafts facing each other. It is necessary that the grafts be in contact with the previously freshened bone ends (Figs. 12, 13, 14, 15, 16). No fixation is used beyond suturing the deep tissues over the grafts, the jaws, of course, being splinted and locked in occlusion the day following the operation. It is early yet to report as to the final outcome in these cases. Primary union followed the operation in all cases except one, in which a hematoma occurred, followed by some suppuration and extrusion of small shreds of bone from the graft. Even in this case, guided by the experience of Delagenière himself, it is hoped that union will occur. In the earlier cases, there is good evidence that union is taking place. The splints will not be removed for at least two months and a half.

Fig. 12 (Case 5).—Wound inflicted Sept. 26, 1918. Ununited fracture, right body of mandible, 3 cm. loss of substance. Appearance of patient before operation. Keloid scar of neck and chin.

Fig. 13 (Case 5).—Appearance of patient after plastic and osteoperiosteal graft operation, performed March 31, 1919.

Free abdominal subcutaneous fat has been employed several times to fill in marked depressions left by excision of adherent scars or when underlying bone has been lost (Figs. 7 and 8).

Costal cartilage transplants are used for correcting depressed nasal bridges. As a rule the entire thickness of the sixth cartilage is used.

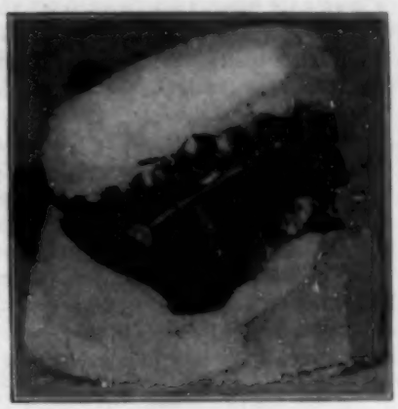

Fig. 14 (Case 5).—Cast metal cap splints used for fixation of ununited fracture during bone grafting. Extensible saddle for posterior fragment.

The anesthetic most commonly employed is ether, given intrapharyngeally through nasal tubes. The bottle containing the ether is attached to an oxygen tank, and the bubbles of oxygen carry the ether to the patient, there being thus no necessity for a foot bellows or motor pump. Ordinarily it is not necessary to warm the ether. Regional and infiltration anesthesia with 1 per cent. procain-epinephrin is very useful for many of the lesser plastics.

Fig. 15 (Case 5).—Loss of substance of mandible as result of wound.

Fig. 16 (Case 5).—Osteoperiosteal graft in place, May 3, 1919.

Careful records of cases are being preserved by means of photographs, color sketches, diagrams of operations, roentgenographic prints, plaster casts and wax models.

Ventilation.—Rooms having a window area equal to or greater than 21 square feet per person do not require mechanical ventilation.—*Bulletin*, State Board of Health of Rhode Island, August, 1919.

CAMPHORATED OIL TUMORS *

W. H. MOOK, M.D.
AND
W. G. WANDER, M.D.
ST. LOUIS

This paper is an abstract of a preliminary report on a series of important cases we have lately been observing in increasing numbers in which tumors resulted from the injection of camphorated oil. They are from the skin service of Engman and Mook at the Barnard Free Skin and Cancer Hospital, at the Washington University Clinic, and in their private practice. We have heard of other cases, and in view of the great quantities of camphorated oil injected during the epidemic of influenza last year, as well as its common use in operating rooms as a stimulant, a word of warning may not be amiss.

REPORT OF CASE

Following is a typical case:

Miss A. R., aged 32, had been in good health until the middle of December, 1918, when she had had influenza followed by a severe pneumonia, and had received at the critical time in her illness, when partially unconscious for about five days, about eight injections of camphorated oil in the right arm and three or four in the left. For some time afterward, the right arm was weak, and the sites of the injections were tender, but she had no actual pain. She paid no attention to her arms until June, six months later, when she consulted her doctor about the "lumps" on them. He said they were not due to the injections, because there was a tumefaction on the inner surface of the right arm, and he had not injected in this area. The tumors were increasing in size in both arms, but there was hardly any perceptible redness. The latter part of June, or six and one-half months after the injections, they began to increase rather rapidly in size, and became red and inflamed and somewhat painful on pressure. They continued to get larger and more inflamed until now, in September, nine months after the injections, the entire anterior, outer and posterior portions of the right arm are a mottled bluish red, swollen, hard and very infiltrated. The local temperature is considerably higher than that of the normal skin. The mass is lobulated, and around the periphery the edges are linear and very sharply differentiated from the adjacent tissue, with distinctly marked angles, instead of merging gradually into the normal tissue. The inner aspect of the arm is represented by a wide, circular, reddened band of infiltration, and here the inflammation is a little more acute. The whole process completely encircles the arm just above the elbow in an infiltrated band, and has so interfered with the return circulation of the arm as to produce edema of the hand and the forearm.

Fig. 1.—Inflamed tumors in arm, resulting from injection of camphorated oil. They began to grow one month after the injections. The photograph was taken four months later.

The left arm has a similarly inflamed tumor mass, just above the elbow, but it is very much smaller and only on the outer aspect.

Extending downward over the external surfaces of both elbows and forearms to a distance of 8 cm. on the right arm and 6 cm. on the left, are the same doughy infiltrations, with angular edges, triangular in shape, the apexes pointing downward. They are slightly reddened, but not as inflamed as the earlier arm lesions. Small, beadlike chains of little tumors may be felt in long strands around the periphery of the tumors proper, and they also extend upward toward the right axilla, like metastatic malignant tumors growing along lymph channels.

These processes are obviously the result of the seeping of the oil along nonresistant paths, such as the lymph channels, or between muscle fibers.

The right upper chest and supraclavicular space are somewhat swollen, but show no tumor process. The superficial, dilated veins indicate this swelling to be secondary to the circulatory obstruction in the arm.

In our first case, diagnosed in 1914, a piece of inflammatory tumor was excised, and the diagnosis from the pathologist was tuberculosis, probably owing to the tumor's granulomatous character, with many giant cells. This led us, at first, to believe that the tumors belong to the sarcoid class. In a later case, with practically no clinical inflammation, a piece was excised and the true nature of the lesions discovered.

The term sarcoid has been used by Darier and Boeck to differentiate subcutaneous tumors that are granulomas, due in some instances to tuberculosis, while the origin, in others, is unknown. In some clinical aspects, the tumors described in this report might at first be so classified, in that the inflammatory tumors are granulomas, too; but now that their etiologic factor has been clearly established, they are no longer to be classed with the sarcoid group, for they are known now to be mechanically produced inflammatory tumors.

Ever since paraffin has been injected subcutaneously to remedy various defects, we have been well acquainted with the possible subsequent tumor development and activity. In most instances, no difficulty is experienced in the diagnosis of these tumors, for generally the patient is aware, when he applies for treatment, that they are due to paraffin.

The tumors due to the subcutaneous injection of camphorated oil greatly resemble the paraffinomas in their slow development, their peculiar concrete-like type of infiltration, and the time in which they develop after injection. Their location, however, is so totally different from that of paraffinomas as not even to cause suspicion that they are of the same nature and due to the same cause, namely, the subcutaneous injection of an oil, probably mineral.

An analysis of the cases shows a series of six patients who developed tumors in the arms, some also in the thighs, all with practically the same history and lesions of the same characteristics; namely, the appearance of deep tumors, following the injection of camphorated oil for a previous severe illness, situated generally on the outer aspects of the lower third of one

* From the Barnard Free Skin and Cancer Hospital.
* The full report, of which this paper is an abstract, will soon be published in the Journal of Cutaneous Diseases.

or both arms and occasionally in a shoulder, thighs or breasts. They are of months' duration, and if not inflamed they have a doughy or concrete-like infiltration that may be from the size of a walnut to the size of an orange, and is usually lobulated. The size of the tumor depends on the amount of oil injected and the extent of the individual reaction. Instead of being rounded in outline, they are linear, with definite, sharp angles marking them off from the normal connective muscular tissue which is adjacent. Beadlike infiltrations of the same nature, but smaller, may be traced toward the axilla or around the periphery, simulating the metastasis of a malignant growth along lymph channels. The skin surface may or may not be elevated or discolored, and some tumors are discoverable only on palpation. They are practically always deep in the muscle or connective tissue. They may or may not be painful, or even tender. The early discomfort is generally slight.

If they are inflamed, the process is of long duration and the skin will be of various hues, varying from a red to deep purple, the color depending on the congestion and the amount of inflammation. The local temperature in inflammatory tumors is higher, of course, than that of the surrounding normal skin. In none of our cases has necrosis occurred, such as occurs in paraffinomas; but this may be due to two factors: First, the character of tissue involved, which allows the oil to move in various directions, whereupon the inflammation occurs up and down the arm between muscle fibers, the fascia and the lymph spaces. No doubt, if the oil was to be injected in the face, necrosis would occur as in paraffinomas, owing to the difference in tissue character, that of the face favoring necrosis instead of subcutaneous distribution. Second, the factor of time. Since some of our most marked cases are of recent observation, not enough time has elapsed to let us see the end-results. In one instance, at least, necrosis has been expected two or three times, and the constriction of the tumors has so interfered with the arm circulation as to produce edema and to suggest the possibility of an amputation if the obstruction becomes more complete.

Fig. 2.—Histologic section of camphorated oil tumor, showing cavities and tissue containing the oil. It is very typical and resembles paraffinoma tissue.

The microscopic sections demonstrate the encapsulated oil cavities, virtually the same as seen in paraffinomas.

The necessarily inert and stable character of the oil in the globules from excised tissue suggests at once that the oil may be a mineral or paraffin oil. Parallel staining reactions between oil from the tissue and liquid petrolatum strengthen this suggestion; both stain with sudan III, but fail to stain with osmic acid.

In at least two instances, the camphorated oil used was manufactured by a well known drug manufacturer, and in one the oil we obtained was part of a quantity bought by the local druggist. The camphor was put up in a mineral oil and in all respects reacted to the same tests as the oil recovered from the tissue excised from one of the patients.

In the case in which the oil was a part of a quantity bought by a local druggist, it failed to saponify on boiling with a solution of potassium hydroxid, and there was no soap demonstrable in the resulting product, indicating—and more or less conclusively establishing—that liquid petrolatum was the vehicle used in the camphorated oil injected.

From our studies thus far, it appears apparent that liquid petrolatum may remain as an inert foreign body in tissue, whether injected as paraffin to correct facial defects or as camphorated oil when injected in the arms, thighs or breasts as a stimulant during an operation or in any very severe illness.

The inflammatory tumors that may result from either are more or less serious, and the use of camphorated oil as a stimulant should be discontinued until researches show that it can be made innocuous with a vegetable or an animal oil, or a vehicle that will be absorbed immediately after injection, with no ultimate bad effects.

The study reveals other possibilities of bad results from the use of liquid petrolatum as a vehicle in the mixtures of mercurials, such as the salicylate and calomel, in the treatment of syphilis. Deaths from emboli after such injections occur often enough to make one a little apprehensive in their routine use.

Emboli of the lungs from oil have been known to occur.

We have reached the conclusion that it is dangerous to use liquid petrolatum as a vehicle for any remedy to be injected in subcutaneous tissue. This fact has been well established in regard to paraffin injections, and the tumors resulting from the injection of camphorated oil made with liquid petrolatum strengthen the conclusion.

Fads in Treatment.—Further, you must avoid, like the devil, all fads in treatment. Fadery lies in wait all through professional life. It does not matter so much what pathological fads you hold; that is only a disorder of belief. But when you carry those fads into action and treat people on "faddy" lines, you are guilty of disorder of conduct, and disorder of conduct is insanity. There have been many eminent persons in our profession who have succumbed to the vice of faddism, and they become in their treatment, in certain respects, insane, and, therefore, in a practical sense, they are a real danger to the community. Watch out, then, for the earliest indications of faddism in yourselves. It was said by Sir James Paget, one of the wisest men who ever practiced our profession, that as you begin to get older you tend to write the same prescription for everything. The man who does that is an incipient faddist.—Robert Hutchison, Some General Principles of Therapeutics, *The Practitioner*, September, 1919, p. 164.

RECONSTRUCTION AND AFTER-CARE OF OLD UNREDUCED POTT'S FRACTURES *

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NEW YORK

The most frequent disability following in the wake of Pott's fractures is flat foot. This is often exaggerated and rendered painful and persistent by a slight posterior displacement of the foot on the tibia or a widening of the ankle joint, due to a rupture of the tibiofibular ligament. Of course, there is a large percentage of Pott's fractures in which the tibiofibular ligament is not ruptured. These will have a normal ankle joint mortise. There is another factor in the reduction of a flat foot. Often after a Pott's fracture the foot is put up at right angles but in valgus position, and the muscles which support the arch of the foot are put on the stretch, the patient is allowed to walk in the support with the foot in this faulty position and a flat foot develops, the result, largely of loss of muscle tone.

In the treatment of these cases the degree of disability and probable end-results are the main factors to be considered. The age of the patient and the traumatic inflammatory changes, whether vascular, lymphatic, osseous or of the soft parts, should always receive careful attention before operation. The operative procedure varies in each individual case, depending on what is necessary for the establishment of the normal anatomy of the foot. In the after-care, one method may apply to all cases.

Fig. 1.—Ununited fracture of internal malleolus; marked widening of mortise of ankle joint; ruptured tibiofibular ligament; fracture of fibula 3½ inches above joint.

I have selected a case for consideration giving the following history:

A laborer, aged 35, weighing 180 pounds, fell 20 feet, in March, 1917, sustaining an injury of the left ankle. Inspection showed the foot in position of equinovalgus, marked traumatic flat foot, posterior displacement of the foot on the tibia, and a widening of the ankle joint. The patient walked with a marked limp and was able to stand or walk for only a little while. A roentgenogram taken at the Hospital for Ruptured and Crippled, in January, 1918, ten months after the injury, disclosed an ununited fracture of the internal malleolus at the base, a rupture of the tibiofibular ligament, a fracture of the fibula 3½ inches above the joint, a displacement of the tarsal bones as found in third degree flat foot, and posterior displacement of the foot.

OPERATIVE PROCEDURE

First. The foot was grasped between the hands and knees and forced around into varus, overcorrecting the pes planus and reestablishing the normal relation of the tarsal bones as near as possible.

Second. An incision was made over the internal malleolus, the fibrous tissue removed, and the ends of the fragments freshened by chiseling. An inlay of bone was slid down from the tibia into a groove prepared in the malleoli, and this was sutured into place.

Third. An incision was made over the fibula and the fibula divided transversely about 1 inch above the ankle joint. Then with a curet the fibrous tissue with

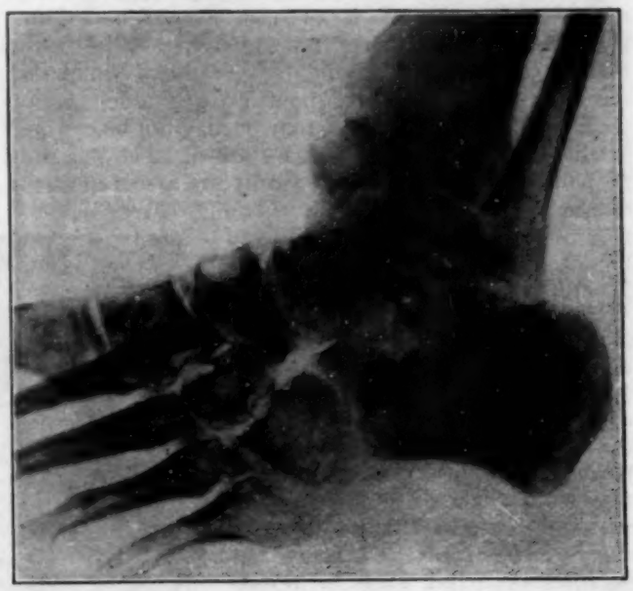

Fig. 2.—Equinus with posterior displacement of foot. The position is equinovalgus.

periosteum was removed from between the tibia and fibula from the ankle joint up to the fracture line.

Fourth. The Achilles tendon was divided by the "Z" method, and the foot was forced up into dorsal flexion. This reduced the posterior displacement. The foot was then pulled around into slight varus, approximating the fracture of the internal malleolus to the tibia and forcing the raw surfaces of the tibia and fibula together. The wounds were then closed.

The foot was put up in plaster of Paris in corrected position and held so for six weeks. A roentgenogram taken at this time revealed a reestablishment of the mortise in the ankle joint by union of the tibia and fibula, a union of the internal malleolus, and an all-round reconstruction of the bony anatomy of the foot.

AFTER-CARE

The after-care consists of: first, continual support; second, baking and massage; third, exercises and manipulations. The support of the foot was of two types: first, plaster of Paris for eight weeks, then adhesive plaster strapping for two or three weeks longer, and finally a Whitman arch support with a raise of shoe of one-quarter inch on the inner border of the heel and toe. The exercises and manipulations are those for reestablishing muscular power of weak feet in general.

In one case, photographs showing the relative contour of the injured and the uninjured foot reveal less deformity on the injured side, or left foot, than there is on the right side, or uninjured foot. This is accounted for by the forced correction of the flat foot on the injured side while the existing flat foot on the uninjured side was merely supported and not corrected.

* Read before the Section on Orthopedic Surgery at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

This man returned to work twelve weeks after operation and has been at work since that time, wearing a Whitman brace with his shoe raised one-quarter inch on the inner border of the heels and toes.

OTHER CASES

I have had two other cases which needed operation. In one only the flat foot and posterior displacement needed correction, necessitating the lengthening of the Achilles tendon. The other patient had a rupture of the tibiofibular ligament. The fibula had healed in a faulty position, and there was a widening of the mortise of the ankle joint. This patient was first seen six weeks after injury. An osteotomy of the fibula and a lengthening of the Achilles tendon, pulling the foot in varus and dorsal flexion, and using the after-care described in the case first mentioned, restored the normal function of this foot, so that the patient has been able to resume his former vocation, which was moving and lifting heavy boxes of goods, without discomfort.

A CAUTION

It is very important that the normal mortise of the ankle joint should be restored. If it is not there will be too much play at the ankle joint. The astragalus will be allowed to rotate, and the foot will be permanently weakened. Special stress is laid on this point, as too little attention has been given to this aspect of the lesion both in recent and old cases of Pott's fractures.

ABSTRACT OF DISCUSSION

DR. ZABDIEL B. ADAMS, Boston: To reduce these fractures simply means restoring normal conditions as far as possible. The method described originally by Dr. Pott in the treatment of these fractures is not carried out in general. In the classical Pott's fracture the procedures that have been

Fig. 3.—Six weeks after operation. Union of internal malleolus; a reestablished ankle joint mortise; reduction of posterior displacement and foot at right angle.

pointed out in this paper are the ones that must be resorted to in order to get a perfect result. If they are carried out, one can, in most of these cases, get a very marked improvement, if not an almost complete cure.

MR. ERNEST W. HEY GROVES, England: The keynote of the whole situation here, as in most orthopedic surgery, is prevention. When a Pott's fracture has remained unreduced for any considerable period of time, we can never expect, even by the most ingenious operation, to produce as good a result as if the deformity had been prevented in the first place. So much change takes place in the articular surfaces of the bones, and there is so much play on the ligaments, that a perfect result cannot be looked for. I am quite in agreement, however, with the general lines of treatment laid down by Dr. Sneed.

DR. WILLIS C. CAMPBELL, Memphis, Tenn.: The one fact that has been shown in this paper is that these fractures can be rebroken and reduced, the result in many instances being anatomically and functionally perfect, without the necessity for any internal splints. Dr. Sneed used, in one instance, the sliding graft, on account of the ununited fracture. The

Fig. 4.—Relative contour of both feet eighteen months after operation. Notice long scar over internal malleolus of the left foot and the lesser degree of flat foot on the injured side.

average Pott's fracture is not complicated by nonunion at the point of the mesial fragment, as in his case. Consequently, the raft is unnecessary. I have operated in two cases within the last six months, both being of exactly similar displacement, except that union was perfect. In both cases there was long union between the tibia and the fibula for a considerable distance. This necessitated chiseling between the two bones before replacement. After replacement in proper position, putting the foot in inversion in a plaster cast, I used the simple Thomas heel in shoe, and found it unnecessary to employ any other form of support. Both these cases occurred in young people. The restoration was practically perfect, and I felt that long after-treatment was unnecessary. In old atypical cases, long continued support with the Whitman, or some other form of arch support, would be necessary.

DR. JAMES W. SEVER, Boston: There is one point that I should like to have Dr. Sneed speak of in closing the discussion. That is in regard to the articulation between the tibia and fibula and the rupture of the tibiofibular ligament. In cases in which there is definite injury to the joint, there is a great deal of disability and widening between the two bones. The condition clinically looks like a fracture, but apparently it is not. The adequate treatment of these cases should be discussed, because it is overlooked, the condition being treated as a sprain.

DR. HARRY E. STEWART, New Haven, Conn.: An interesting point has been brought up about the treatment by means of orthopedic gymnastics and massage. We should not confine a man, after a surgical operation, to an artificial support like a plate, but follow up the procedure with treatment designed to bring back the tone of the muscles and ligaments. We should look on the arch plate as we would on any other splint, to be worn while necessary, and discarded as soon as possible.

DR. CHARLES M. JACOBS, Chicago: I consider it a great mistake to immobilize the joint for many weeks as is now being done whether the joint was, or was not, operated on. It is my custom to apply a plaster cast for about ten days; at the end of this time passive motion is used each day for a certain period of time; following which a posterior molded splint is used.

DR. FRED J. GAENSLEN, Milwaukee: Very frequently there is a breaking of the lower and anterior portion of the tibia; and if the fracture is of long standing, this misplaced frag-

ment acts as a definite obstacle to the reduction of the fracture. In most cases, it would be necessary to remove the fragment or loosen it, so that it would not interfere. Another point is that it is wise to reduce these fractures with the knee in acute flexion. This position relaxes the Achilles tendon avoiding the necessity of tenotomy so that reduction may be accomplished with ease. The plaster may be removed to just below the knee at the end of two weeks, without danger of reluxation.

Dr. William L. Sneed, New York: There is no doubt that many of these cases, as viewed from a roentgen ray standpoint, do not show any fracture. It is possible to have a rupture of the anterior lateral ligament and of the tibiofibular ligament that will give a widening of the joint and injury on the inner side that does not go as far as a fracture, having no bony lesion, but that gives the same symptoms as in Pott's fracture without the deformity, other than a widening of the joint. There is a large percentage of cases in which the tibiofibular ligament is not ruptured. Of course, these cases need no consideration. These patients come to us, maybe one year or two years after the injury, and we must consider them in the light of what can be done at that time, and what it is wise to do, taking into consideration the bony and ligamentous deformity, the muscle degeneration, and the presence or absence of lymp or blood vessel changes. Sometimes it is unwise to do anything at all, as when there is infection in the tarsal bones. I have not known of any case in which it was necessary to carry the support about the knee. We all try to get rid of any mechanical support. If we can restore the normal anatomy, and it needs no support, we do not use it. It is only in the cases in which we cannot restore the normal anatomy that we need to use the support.

ARSPHENAMIN IN PNEUMONIA WITH DELAYED RESOLUTION IN SYPHILITIC SOLDIERS

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In some individuals an acute disease will so derange the protective mechanism of the body that an old infection lying apparently dormant will be reactivated thereby.

Medical officers stationed during the war in Southern camps where malaria was prevalent not infrequently observed instances of renewed malarial infections in soldiers sick with pneumonia. These soldiers gave old histories of malarial fever with chills, fever and sweats, in some instances years prior to their entrance into the army. The symptoms of malaria appeared usually in the early part of convalescence from pneumonia. The chill and fever were typically periodic. The spleen was usually enlarged. Tertian organisms were found in the blood, and the paroxysms of fever responded promptly to quinin. Several such instances occurred at the base hospital at Camp Wheeler during the epidemic of pneumonia in the winter of 1918-1919.

A severe attack of pneumonia will sometimes weaken or break down the protective cell forces in or about old pathologic lesions in the lung. Pulmonary tuberculosis offers an instance in point. Pneumonia not infrequently lights up an old apparently healed or latent tuberculosis lesion, and the patient who supposed himself cured of tuberculosis is brought face to face in a life and death struggle with his old enemy, the tubercle bacillus.

We are not aware, however, that the attention of the profession has been called to the fact that syphilis may act to prolong or delay the reparative process in the lungs of persons who have had pneumonia, and that syphilitic persons with pneumonia are liable to exhibit signs of delayed resolutions for weeks or months of time. The healing process in these cases does not progress as in the normal individual, and the usual methods of treatment are of no value, while in the cases we have observed, specific treatment has been effective.

The following three cases observed at Camp Wheeler during the epidemic of pneumonia, occurring between Oct. 5, 1918, and Feb. 1, 1919, illustrate the effect of syphilis in causing the delayed resolution of pneumonia and the prompt effect of arsphenamin in clearing it up.

REPORT OF CASES

Case 1.—J. J., aged 22, colored, single, soldier in labor battalion, with a negative family history, had measles, mumps and whooping cough as a child, malarial fever in 1914, and smallpox in 1917. He denied having syphilis, but admitted having gonorrhea. Nov. 14, 1918, when going to drill, he developed severe pains in his left side and had a chill. He was admitted to the base hospital the next day with high fever (104), delirium, rapid breathing, dyspnea and marked cyanosis.

The examination of the chest revealed dulness over the entire left lung with bronchial breathing but no râles. A diagnosis of lobar pneumonia of the left lung was made.

From November 14 to the 24th, the man was very sick with pneumonia, his temperature ranging between 102 and 106.8. He had marked delirium, bloody sputum and high leukocytosis, and a Type IV pneumococcus was isolated from the sputum. November 25, his crisis occurred, and the temperature dropped to normal and remained so until his discharge, March 3, 1919.

In spite of the patient's improved condition, the left lung remained dull to percussion. Crepitant râles and bronchial breathing continued to be heard in the affected area. Roentgen-ray examination revealed an unresolved pneumonia of the left lung. Exploratory puncture of the pleura was made for possible fluid but none was found.

December 30, six weeks after the onset, the lung showing no signs of clearing, the blood was taken for a Wassermann test, and a ++ report was returned. Since the lung remained consolidated and the usual therapeutic measures had proved of no avail, it was decided to try arsphenamin. The patient was given 0.4 gm. intravenously beginning January 14, two months after the onset, and continuing one injection every seven days until five injections had been given. After the second injection of arsphenamin a rapid change in the lung condition took place. The signs of consolidation promptly subsided and the râles disappeared. By February 2, nineteen days after the arsphenamin treatment was started, all signs of lung involvement had cleared.

Case 2.—James R., aged 25, colored, single, soldier, with a negative family history and with no history of chancre, was admitted to the base hospital, Dec. 5, 1918, complaining of headache, cough, chills and stupor. He stated that three days prior to admission he commenced to feel a pain in his left chest and had a cough. He felt chilly and thought he had fever. On the second day of his sickness he began to cough up some bloody looking sputum and was then sent to the hospital.

The examination on admission revealed nothing of importance outside of the lungs. Over the right lung posteriorly many crepitant râles could be heard on cough or deep breath-

ing, the percussion note was not impaired, and no bronchophony or tubular breathing could be detected. Over the left lung posteriorly, the percussion note was impaired with some increase of bronchophony, tactile fremitus and many fine crepitant râles. His temperature was 103, leukocytes 7,300. The urine showed a trace of albumin and a few hyaline casts. The diagnosis of bilateral bronchopneumonia was made.

From December 5 to January 11, the patient was examined from day to day; and while his temperature dropped to normal, December 16, the physical signs persisted in both bases and would not clear up. Roentgen-ray studies revealed unresolved bronchopneumonia of both lungs. A blood examination, December 8, gave a ++ Wassermann reaction. The failure of the lungs to clear after six weeks of observation and expectant treatment, the ++ Wassermann reaction and the experience in Case 1 with arsphenamin warranted a trial of the same treatment in this case. The note of January 7 read: "Crepitant and a few sibilant râles heard in the base of both lungs behind. These do not clear up. There has been no appreciable change in the physical signs for weeks."

January 14, about six weeks after admission, 0.4 gm. of arsphenamin was given, and the same dose was repeated thereafter every seven days until five doses had been given. One week after the first dose of arsphenamin was given the physical signs began to show improvement, and after the second injection a marked clearing of râles was noted, while after the third injection of arsphenamin all the lung signs and cough had disappeared and the patient was in excellent condition, and was discharged.

CASE 3.—Thomas S., aged 21, colored, single, labor battalion, with a negative family and past history, and who denied venereal disease, was taken sick, Oct. 26, 1918, with headache, malaise and fever, and was sent into the base hospital three days later. A diagnosis of bilateral bronchopneumonia was made and a Type IV pneumococcus isolated from the sputum.

The man was very sick with pneumonia from October 30 to November 7, when his temperature dropped to normal and remained so until he was discharged. A Wassermann test, taken December 1, showed a ++ reaction.

On Jan. 8, 1919, nine weeks after admission, the lung findings were as follows: "Posteriorly over the right lung, the percussion note is impaired from the angle of the scapula downward and forward to the midaxillary line. Showers of râles are heard over this area and bronchophony is slightly increased. Sibilant and fine crackling râles can be heard behind over the base of the left lung. There has been very little change in this man's lung condition for the past six weeks."

The clinical diagnosis was: bronchopneumonia, bilateral, unresolved. Roentgen-ray studies confirmed the clinical diagnosis of an unresolved bronchopneumonia.

January 14, the lung condition showing no evidence of clearing and the man giving a ++ Wassermann reaction, an injection of 0.4 gm. of arsphenamin was given intravenously, and one injection was given every seven days until five injections had been given. January 30, two weeks after the first injection of arsphenamin, all physical signs had cleared in both lungs and the soldier was pronounced well and ready for discharge.

COMMENT

We are fully aware of the fact that both lobar pneumonia and bronchopneumonia are self-limited diseases, that resolution of the lung takes place under serocellular processes the nature of which is not known, and that the resolution so promptly brought about in the cases here recited may be explained on the grounds of a natural termination of the disease rather than the arsphenamin effects. However, the impression received in watching from day to day the physical signs and clinical manifestations in these three stubborn cases of unresolved pneumonia in syphilitic soldiers has fully convinced us that the arsphenamin had a specific effect in clearing the lungs, and we advise its use in cases of unresolved pneumonia in syphilitic subjects.

THE BLOOD VASCULAR SYSTEM IN A PARIETAL CRANIOPAGUS*

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The craniopagus shown in Figure 1 was delivered at the Madison General Hospital, May 5, 1919, in a case attended by Dr. Walter H. Sheldon. The twins weighed 11 pounds and 1 ounce at the time of birth. The faces and bodies were practically in vertical alinement. One of the twins, which I shall hereafter refer to as A, was a well developed female; the other, which I shall refer to as B, had an imperforate anus and an imperforate "penis" as large as a normal infantile penis. Subsequently, at a postmortem examination, Dr. C. H. Bunting found that the internal genital organs of A were apparently normal. B had normal ovaries, but its uterus was four times the normal size. In B, furthermore, the sigmoid colon, greatly distended, emptied into a cloaca. The left umbilical artery in B was either very small or was absent. In A, both umbilical arteries were present. Microscopic studies of the umbilical cord have not as yet been made. No other noteworthy abnormalities in either specimen were seen, except in the region of the cranium.

Fig. 1.—Craniopagus, with bodies in practically vertical alinement.

COMPARISON OF THE MEASUREMENTS OF PRINCIPAL PARTS OF TWINS, AND OF THE HEART RATES AND RESPIRATIONS

	A	B
Distance from line of fusion to umbilicus, cm.	23.0	24.0
Distance from umbilicus to sole, cm.	23.5	22.5
Circumference of head, cm.	32	31
Circumference of neck, cm.	19	17
Circumference of chest at nipples, cm.	29.5	32
Circumference of abdomen at umbilicus, cm.	27	37
Heart rate	132	128
Respiration	42-52	24-26
Dimensions of cord, cm. Nose to nose, 13 cm.	55 by 0.75	57 by 0.5

The accompanying table gives some of the chief measurements of each twin.

* From the Anatomic Laboratory, University of Wisconsin, Medical School.

The cords came off the same placenta at the center, about 2 cm. apart. The placenta was almost circular, being 22 by 23 cm. in diameter, and had a V-shaped notch on the periphery, 4 cm. deep and 7 cm. wide. The membranes were intact, and the cotyledons normal and intact.

The birth occurred at 9: 50 p. m. A began breathing thirty seconds after birth, B, fifteen seconds later. Within five minutes, both cried vigorously. In the course of a few days it became obvious that there was no close functional correlation in the activities of the nervous systems of the twins. One would sleep soundly while the other was awake or cried. Furthermore, as shown in the accompanying table, the respiratory and pulse rates varied in the two individuals. Both fed normally, although B soon showed signs of discomfort because of the imperforate anus. Its abdomen became greatly distended and, on the seventeenth day, its "penis" was noticed to be distended. A probe was then pushed into the base of the "penis," and following this there was a discharge of fecal matter. On the ninth day, B became comatose, and A showed signs of discomfort, began crying, and continued to cry until its death, May 15, at 5 a. m. A died fifteen minutes after B.

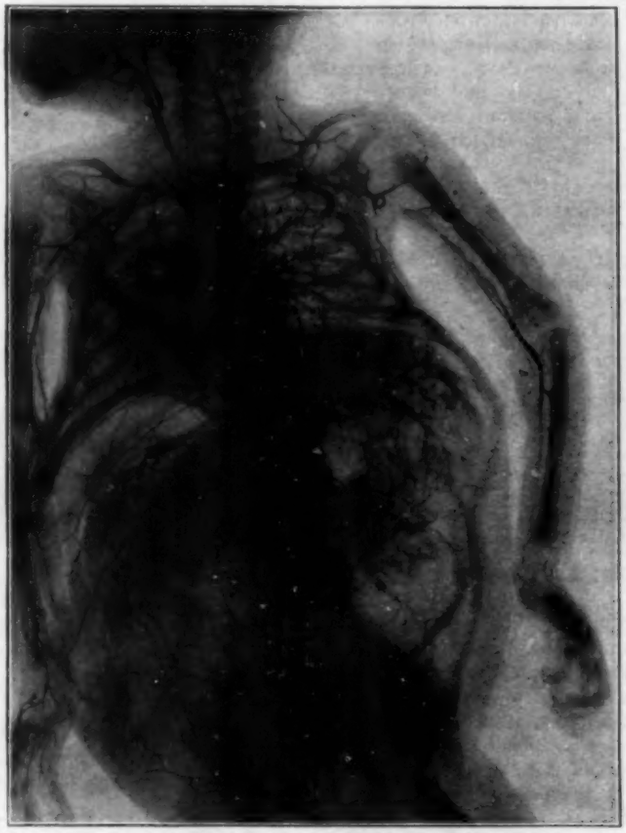

Fig. 2.—Apparently normal arterial system in A, as shown by a stereoscopic roentgenogram taken after injection into the arterial system of a mixture of alcohol, phenol and glycerin, in which barium sulphate was suspended.

The fact that the death of one twin was followed so soon by that of the other indicated that there was probably some circulatory connection between the two bodies, in spite of independence of pulse rate. To determine this, the arterial system of the normal twin, A, was injected through the abdominal aorta with a mixture of 40 per cent. glycerin, 40 per cent. alcohol (95 per cent.) and 20 per cent. phenol (carbolic acid), in which 175 gm. of barium sulphate per gallon was suspended. Stereoscopic roentgenograms were then taken of the specimen by Dr. Howard Curl, roentgenologist at the university clinic. These roentgenograms, one of which is reproduced in Figure 2, showed an apparently normal arterial system in A and no gross connection between the arterial systems of A and B.

In Figure 3 the arteries of Specimen A at the right may be seen to terminate fairly abruptly at the line of junction of the heads of the individuals.

Some of the injection mass in A, however, passed through the capillaries into the veins. This occurred most readily in the brain, where the injection mass, in part, passed over into the venous sinuses. There was a communication between these sinuses in A and B, and from the venous sinuses of B, the injection mass passed to the right side of the heart and into the veins of the liver and into the pulmonary arteries (Fig. 4). For the first injection, a pressure of one-half pound was used. After the roentgenograms were taken, the arteries were injected again, under 4 pounds pressure, without any notable difference in results.

Subsequently, an injection under 4 pounds pressure, made into the arteries of B through the abdominal aorta, showed that the arterial system in this specimen was apparently normal. An injection into the inferior vena cava of A under 3 pounds pressure served to increase the amount of opaque material in the hepatic veins and pulmonary arteries of B, partly filled by the first injection, described above.

Following the completion of these injections, the scalp was cut opposite the line of junction between the two heads. It was then seen that the bones of each skull, frontals, parietals and occipitals, met symmetrically but did not fuse. When the skull was opened, it was found that the two brains were enclosed within a common dura mater. At the line of junction between the two skulls, a circular venous sinus common to the two brains was enclosed in the dura mater, but the dura did not extend far inward between the two brains from this sinus. The falx cerebri of one brain was fused to that of the other, and at the line of junction there was a venous sinus corresponding to the superior longitudinal sinus, and common to the two brains. The brain of each child was covered with pia mater. Where the brains projected against one another the pia mater of one brain was in part fused to that of the other brain. The plane of meeting of the two brains was not a flat one, at least, after the specimen had been hardened in formaldehyd solution. In places, one brain projected slightly above the level of a flat plane, in places the other brain.

REVIEW OF CASES REPORTED IN THE LITERATURE

The specimen here described belongs to a rare type of human monsters. I have been able to find described in the literature only four cases of parietal craniopagus in which the countenances of the two individuals faced in the same direction. These cases, in all of which the teratism was female, with the possible exception of that of von Baer, are cited by Ahlfeld:[1] 1. The first case, after Blainville, is from the catalogue of the Hunterian

1. Ahlfeld, F.: Die Missbildungen des Menschen, 1880.

Museum. The monster was born at Bruges, May 6, 1682, and was living at the time of observation. The twins showed independent individualities. One might sleep while the other cried. 2. The second case is after Otto, 1841. The fetuses were aged 5 months. The superficial blood vessels of the head were anastomosed. Only the smaller branches of the intracranial arteries appeared to anastomose. The brains were completely separated by pia mater. Other organs were normal. There was only one umbilical artery in each umbilical cord. 3. The third case is after von Baer. The monster lived one and one-half days. 4. The fourth case is after Badger.[2] The monster was stillborn, in Jamaica, in 1869. There was no necropsy.

A case in which the two heads faced nearly in the same direction is cited by Ahlfeld, after Naranowitsch.[3] The twins were females, born in St. Petersburg, in 1855. They had independent individualities, and lived six weeks, dying of an acute infection. The brains were enclosed in a common dura mater. There was a common falciform process and superior longitudinal sinus.

There have been a number of parietal craniopagi described in which the dorsoventral diameter of one twin was an angle, usually of about 90 degrees, to that of the other, so that the nose of one was above the right or left ear of the other. Of four such cases, two of the monsters were females; one, a male, and in one the sex is doubtful: 1. The first is cited by Ahlfeld, after Sannie. The monster was born in Holland, in 1752. The nose of one twin was over the right ear of the other. While the text calls the twins females, the illustrations appear to show male genitalia. 2. The second case is cited by Ahlfeld, after Uccelli. The twins were females, born at Florence, in 1823. The angle between the ventrodorsal axes was 45 degrees. Between the two brains was a common dura mater, in which there was an opening through which the brains might have communicated. 3. The third case is cited by Ahlfeld after Klein and Harless. The twins were males, born in Wurttemberg, in 1799. The nose of one child was over the left ear of the other. The monster lived sixty-four hours. The child first born lived a half hour longer than the other. The individualities were independent. The brains were fully separated by membranes. 4. A fourth case is cited by Baudouin,[4] and also by Bermbach.[5] The twins were females, born near Frankfort-on-the-Main, in December, 1911. They were alive at the time of description. The nose of one was over the right ear of the other. They had independent individualities. There was an apparent anastomosis of the superficial blood vessels.

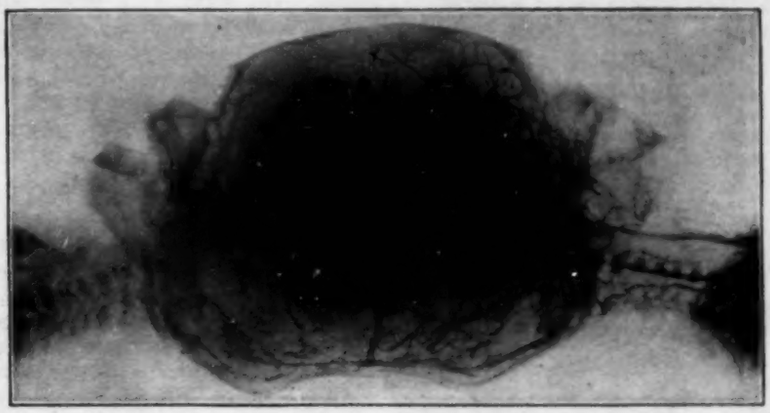

Fig. 3.—Passage, in part, of the injection mass, through the capillaries in A, over into the venous sinuses.

There are also four cases described in which the countenance of one child faced opposite or nearly opposite to that of the other child. 1. One is cited by Ahlfeld, after Albrecht. The monster was born in 1733. The sex is in question. The heads were united by the right parietal bones. The monster lived at least several months. 2. Another case is cited by Ahlfeld, after Villeneuve. The twins were males, born in 1829 in Paris, at about the seventh month. The brains were fully separated by dura mater. There were two cords inserted into one placenta. 3. A third case is cited by Kissinger.[6] The twins were males, born, March 24, 1907. They died of icterus neonatorum, March 30, 1907. There was no dura between the brains, but they were separated by pia mater. The convolutions of the brains were irregular. 4. A fourth case is cited by Ziematzky.[7] The sex, in this instance, was apparently female.

A number of other cases of craniopagy have been reported in which the heads were united in the occipital or in the frontal regions, or irregularly, as by joining of the frontal to the parietal regions. Cases have also been reported in which a fairly well formed head was united to the head of an otherwise normal child. Of these cases, the best known and most interesting is that of Home.[8] The child was born at Bengal, in May, 1783. The parasitic head, which terminated above in a conical protuberance in place of a neck, was fused below to the head of the host, a female, with an angle of 90 degrees between the dorsoventral diameters of the two heads. The child lived for two years, and was then killed by a snake bite. The parasite had the power of moving its eyes, but could not converge them. The lid reflex was defective, and tears were constantly forming. The pupils showed a light reflex, but only on passing from the dark into strong light. The eyes of the parasite at times remained open, while those of the host were shut. The lower jaw was small, but mobile. The ears were defective. The parasite made sucking movements at six months. When seen at 2 years of age, secretion of saliva was active in the mouth of the parasite when the host ate. The parasite is said to have expressed grief when the host cried and satisfaction when the host smiled. If the parasite was pinched, however, the host showed little or no pain. After death, the heads were sent to England. It is stated that a study showed that the nutrition of the parasite must have taken place through the dural or pial vessels. It was not clear from the specimen as to whether or not the two brains were completely separated by membranes.

2. Badger, G.: M. Rec. **4**: 166, 1869.
3. Naranowitsch: Schmidt's Jahrbuch **96**: 296, 1856.
4. Baudouin, M.: Semaine méd. **33**: 553-555, 1913.
5. Bermbach: Rev., Deutsche med. Wchnschr. **38**: 1854, 1913.
6. Kissinger, P.: Med. Klin. **4**: 1681, 1908.
7. Ziematzky: Bull. de l'Acad. Imper. Sc., St. Petersburg, Series 5, **8**: 207-218, 1908.
8. Home: Phil. Tr. Roy. Soc. London **80**: 296-304, 1790.

CONCLUSION

From this brief review of the literature, it is evident that:

The rare form of double monster known as parietal craniopagus usually is of the female sex.

The head of one individual as often faces laterally or backward or in the same direction as that of the other.

There is usually considerable independent individuality in the reactions of the twins.

The brains are nearly always, if not always, separated by pia mater, and sometimes also by dura mater.

The chief vascular connection appears to be in the venous sinuses of the skull, but at times other vessels anastomose.

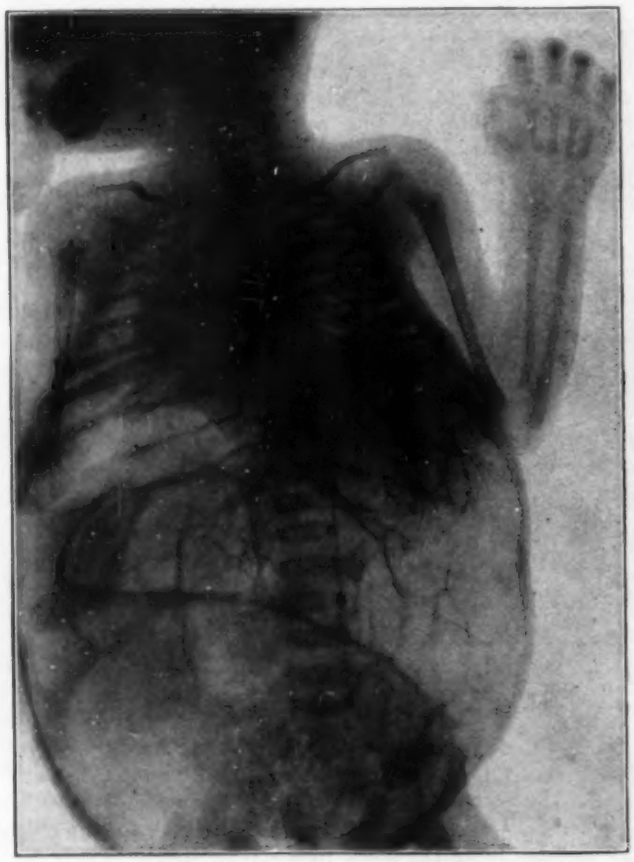

Fig. 4.—Roentgenogram of B, demonstrating a communication between the sinuses of A and B by disclosing passage of the injection mass to the right of the heart in B, and into the veins of the liver and into the pulmonary arteries.

It is probable that there must have been some arterial anastomosis in the case of the parasitic head of Home, described above.[9]

9. In addition to the references already given, the following will be found of interest:
Blank, L.: Les anomalies chez l'homme et les mammifères, 1893.
Miller, N. T.: Jahrb. f. Kinderh. **35**: 464-474, 1893.
Schwalbe, E.: Morphologie der Missbildungen des Menschen, 1908.

Health Center in Massachusetts.—It is strongly urged by the state department of health that the following standard for the protection of the health of Massachusetts children be kept in mind by all those who are working for the betterment of our children: A health center, where special attention will be given to maternity and infant care, for each community or group of communities; public health nurses specially trained for the work, averaging 1,000 to 2,000 of population.—*The Commonwealth* **6**:120 (May-June), 1919.

INTRAMEDULLARY BEEF-BONE SPLINTS IN FRACTURES OF LONG BONES*

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It is occasionally of great importance to be able to fasten securely certain fractures, particularly those of the femur and the humerus and those in which both bones of the forearm are broken. The inlay autogenous bone graft is admirable in many cases, but has the disadvantage of being technically difficult and of not affording a very high degree of immediate stability. The intramedullary dowel or peg, on the other hand, is easy of application and furnishes great strength. Clinical evidence has proved conclusively that such a graft does not interfere with the regeneration of bone tissue, and that fractures operated on by this method unite as readily and as rapidly as by any other method. It is probable that an autogenous peg, made from the patient's own tibia, is the ideal material to use, but circumstances may easily be imagined when it would be undesirable to remove a strip of the tibia. In fact, if a universally adaptable material could be developed, no operator would desire to use his patient's tibia, but up to the present time no claims can be made that there is anything quite as good as the autogenous graft. This is especially true in fractures of long standing, and in the case of elderly persons.

In fresh fractures and in reasonably young persons, however, heterogenous bone pegs may be used with safety and with the assurance that bone growth will not be inhibited. Beef-bone and ivory nails, screws, and intramedullary grafts have been used for many years by a small number of operators, but for some reason have not attained a wide degree of attention. Gallie[1] of Toronto has even gone so far as to use beef-bone grafts for the production of fixation of the vertebrae, after the method of Albee, but I do not feel like advising so radical a procedure as this. For fractures of long bones, however, such as those mentioned above, it is well for the operator to have at hand a ready and simple technic in case of need. It is not always easy to insert an intramedullary peg, especially if it is a long one. The proper alinement of many fractures, however, may depend on the length of the peg, so it is important to be able to insert a long peg with a minimum of difficulty. Hey Groves[2] describes a method which is ingenious, and which suggested the following technic:

TECHNIC

Beef-bone splints of various sizes are cut from the long bones of slaughtered cattle. It is possible to procure from a butcher's shop pieces of the tibia or femur 5 or 6 inches long, and these are split with a saw into suitable sizes. They are then turned in a lathe or filed with a wood-worker's rasp or run through a dowel cutter so as to be round or nearly round. Those for use in the femur should be about 5 inches long by three-fourths inch wide, for adults, and several smaller sizes should be ready in case the medullary canal

* Read before the Section on Orthopedic Surgery at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.
1. Gallie, W. E.: Am. J. Orthop. Surg. **16**: 373 (June) 1918.
2. Groves, E. W. H.: On Modern Methods of Treating Fractures, New York, William Wood & Co., 1916.

should be unusually small, or for use in children. Splints for the humerus should be about three-eighths inch wide, and those for the radius and ulna one-fourth to five-sixteenths, and three inches long. The ends of the splints are rounded off, and a hole is bored through near one end like the eye of a needle. These splints are then sterilized by fractional sterilization, and kept in containers. When it is desired to use them, they are boiled with the instruments.

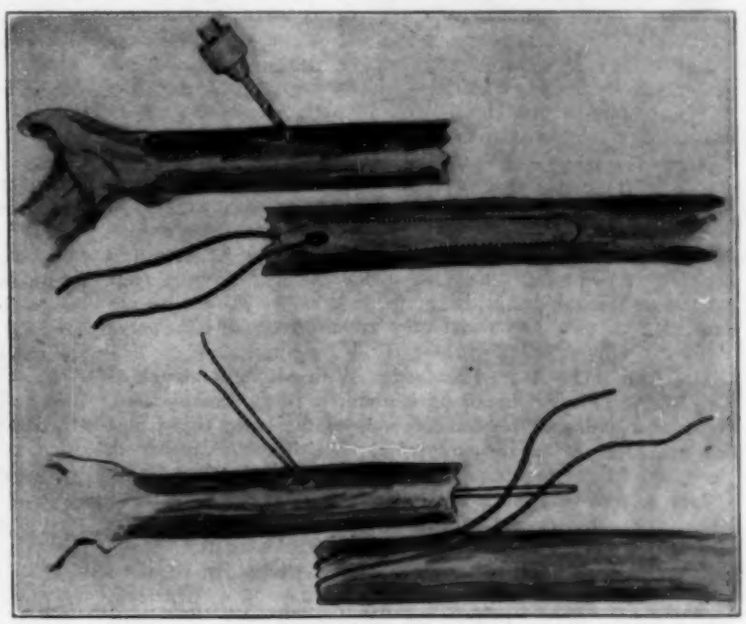
The technic of their use is as follows:

The fracture is exposed with as little removal of periosteum as possible. The beef-bone splint is pushed into the longer fragment until it is completely within the bone, a long piece of heavy chromic catgut having been previously threaded into the eye of the splint. This double thread hangs out from the end of the bone. An eighth-inch drill is now used to bore a hole in the other fragment, distant from the fracture about half the length of the splint. The hole slants a little toward the fractured end. A piece of wire, bent at the middle to form a sort of probe, is now passed into the hole, and out through the fractured end of the bone. The two ends of the catgut cord are then threaded into the wire probe, and the wire is pulled back through the hole, bringing the catgut with it. The overriding ends of the fracture are now reduced, either by a Murphy bone skid or by leverage or traction, the catgut cords being tightened at the same time so they will not become caught or pinched. When the bones are in position, the catgut cords are pulled on, and the splint will glide half way from one fragment into the other, so that it will be at exactly the proper point.

The catgut can be threaded into a needle, and sewed into the periosteum or muscle at its point of exit, which will secure the splint so that it will not slide out of position up or down the medullary canal.

Such a splint cannot, of course, fit the canal very tightly, and it is not necessary that it should fit tightly, provided that it is prevented from sliding out of place, and this is accomplished by the catgut.

This method involves less exposure of the bone than any other mode of artificial splinting with which I am familiar, and in the four cases in which it has been used in human beings, the fixation obtained has been very satisfactory. If autogenous splints are desired, as in old or ununited fractures of long standing, it is easy to make the splints from the patient's own tibia.



Upper part of illustration: splint threaded with catgut and pushed into medullary canal. Lower part: wire loop passed through drill hole ready to pull catgut back through drill hole.

ABSTRACT OF DISCUSSION

MR. ERNEST W. HEY GROVES, London, England: I have been extremely interested in Dr. Ryerson's paper, and in his description of a method that I described some years ago. As he said, the intramedullary peg has been used for a number of years. I should like to compliment and criticize this method in one or two particulars. In the first place, the method is excellent, provided that its exact limitations and its details of application be borne in mind. In regard to its limitations, there are two points that should limit it, if good success is to be obtained from its use. First, the fracture must be clean; and second, it must be approximately transverse—or, at least, not comminuted. The type of fracture that is especially liable to give rise to unsatisfactory results is the very common type of fracture in which there is a little third fragment. In such a case, if you do use the intramedullary peg, it is better to cut that little triangular fragment out and bring the two ends of the long fragments together. I think that the use of the intramedullary peg should be restricted to transverse fractures without comminution. If you employ it for a comminuted fracture, you separate the triangular fragment, which forms an indolent piece of tissue that does not form union. Dr. Ryerson did not describe the principles of what I have described as the long and the short peg. It is quite clear that, however short the peg is, it prevents lateral movement of the fragments on one another. That is the main thing you want. The essential principle of the long peg, four or five inches long, extending a considerable distance, is that it prevents angulation. I believe, however, that it is far better to get the fixation and prevention of angulation by the use of an external splint; because mechanically an intramedullary peg is a great disadvantage. If you have to secure immobilization of the femur by such a long splint, it has to be so long and strong that it is inconvenient to employ. I have personally given up the use of the long peg altogether. I use quite short pegs. Fitting the peg accurately is much more important than Dr. Ryerson gave us to understand. With all due respect to him, I do not think that any method by which a peg is pulled by a thread from one fragment to another gives a sufficiently firmly fitted peg to be satisfactory. I had rather have a method by which a short peg is fitted in one fragment, when the two ends are separated; and then the other end is brought over, and the two are snapped together by muscular contraction. As to the comparison of dead and living bone, I think it has been amply proved that when a piece of bone is used as a nail or as a screw, provided that it be driven like a nail or a screw into an accurately fitting hole in the piece of living bone, there is absolutely no difference between the behavior of dead and living bone; and those who believe that autogenous bone acts differently under these conditions are under obligation to bring forward some evidence sustaining their position, which has not yet been done. I am not speaking of grafts as a whole. That is quite another matter. Within six weeks the cells from the living bone grow into the dead peg as far as into the living bone. Therefore, I am convinced that when it is a case of using a nail, the dead bone nail is as good as the living; and it is far easier to prepare and make fit than is a living, autogenous bone nail.

DR. HORACE R. ALLEN, Indianapolis: Dr. Ryerson has very ably presented another new modification of the bone peg. Down in Fort Oglethorpe I built a museum of modern war injuries and their surgical treatment. In this collection I made a model of the bone peg operation. Major Levinson

of San Francisco told me of his peg operation. The model showed a rectangular opening in the side of the shaft of the bone of sufficient size to permit a bone peg to be worked along inside the canal of the broken bone past the line of fracture. He informed me that the piece of bone should not be removed but should be pushed into the canal and then used as a bone peg. In turn I suggested the use of transverse pegs at the ends of the long peg to prevent its slipping up or down. This modification of his suggestion has since proved very useful. Concerning the length of bone pegs it should be born in mind that a long peg not only equals a short peg in preventing the lateral shearing or displacing element but it also tends to hold the bones in alinement better than a short peg. If only one bone is broken in a leg or forearm there is always difficulty in bringing out the fractured ends. If a short peg will prevent the lateral shearing or lateral displacement the angularity can readily be taken care of by the wire loop method. It consists of a wire suture passed over the angular apex, its free end being attached to an outside straight edge.

Dr. Robert McE. Schauffler, Kansas City, Mo.: The hard ivory pegs last too long. In some cases in which we had a perfectly firm union of the fragments, there would be a little piece of dead bone or two on the edge; and, consequently, a persistent little sinus. In these cases, after a perfectly firm and satisfactory union, the sinus would not heal; and we had to cut down and get out this little piece of quite hard bone. It showed that the medullary splint was lasting too long. When you cut these medullary splints yourself, you are apt to take the hardest part of the beef bone, file it, and give it a fine edge; but when made commercially, they do not do as well as when they are cut a little rougher. The bone should also be left a little porous and not polished so nicely. They should not be prepared too far in advance. These somewhat rougher looking pegs of not too highly polished bone give as good results and last long enough, and when they are used secondary operations are almost unknown.

Dr. Joseph E. Root, Hartford: With all due respect to Dr. Ryerson's very ingenious method, it is too complicated. Remember, all that we have to do, or the main thing that we are after is to secure perfect apposition. All that is necessary in the femur is to obtain perfect apposition, so as to get perfect length. I began by taking the ordinary long bone splints and endeavoring to get them into place by traction, but I have given that up. I have also used the autogenous grafts referred to by other men. All that is required is to hold the fragments together at the point of fracture, and it seems useless to have an intramedullary graft longer than that required for the purpose of perfect apposition. If the bone is in straight, it will stay so; then you can put on ordinary external splints or plaster. To hasten the time of the operation, instead of having a graft with a square end, I saw a semicircular or pointed graft about one and one-half inches long, driving it half way into the medullary space of one end and fitting it into the other. This affords all the necessary fixation at the point of the fracture. By relaxing all the muscles—they can be separated without cutting the fibers—the fragments can be brought out through the hole. Simply bend the limb sharply at the point of fracture, drive the peg into one end, fix the graft in the center of the other fragment and straighten the limb out, thereby locking both fragments. A long external splint, or preferably a plaster spica, will keep the bones in line and enable the patient to get out on crutches the second week. As far as operation time is concerned, it can be reduced greatly by an assistant who takes out the bone graft from the other leg, while you are exposing the bone fragments. In the majority of cases there is a triangular fragment which, of course, becomes loose and detached in some cases. At first, I hesitated about replacing it, but now I replace it. I have noticed in my roentgenograms that a superabundance of osteoblasts were thrown out with a resultant large and long callus.

Dr. Fred S. Williams, Bridgeport: Speaking of snapping the bone back in place, wherever there is a square break, it will do that; and you do not need any peg to hold it.

Dr. E. W. Ryerson, Chicago: I do not want to have Major Hey Groves assume that no external fixation was to be applied, because that is the most important feature in treating fractures—the external fixation, and not the internal. Of course, we use the best means at our command for this, using splints, apparatus and plaster of Paris for this purpose, as may seem desirable. Regarding the length of the peg, I would say that a long peg is not necessary in transverse fractures of the femur. That is self-evident. Where you do need it is in fracture of both bones of the forearm; and any man who has had much experience with these fractures will feel better satisfied, if he puts in a long peg, so that the bones will not become bent and approach each other to form a synostosis. We have had many cases in the army in which this has happened, and in which loss of pronation and supination has resulted. It is extremely valuable, in my opinion, to have a sufficiently long splint in these cases to maintain the alinement; because the line of the ulna and that of the radius are different, and in some cases you cannot maintain them by external fixation. I feel very comfortable when I have a long splint in the radius and in the ulna that will maintain them in alinement. Also, in comminuted fractures of the femur, it is well to have a long splint. I have not had the experience of having the small keystone-shaped fragments make trouble, but I undoubtedly shall some day; and I am glad to have had it brought to my attention. The peg method described by Dr. Allen was described by Dr. E. J. Hoglund, a number of years ago. It was published in exactly the same form shown by Dr. Allen, except for the two little drill holes in the bone, which Dr. Allen has described. I think that it is difficult to put a peg in, slide it through, find the holes, and put the catgut through them. It may be easy, but it looks difficult to me. The method of putting wire around these fragments and pulling them in line I have not tried. I do not know that I should be willing to try it. The idea of having a short peg and getting the bones into line is possible; and the statement made that if the fragments come into line and are securely locked, they do not need other fixation, is sometimes true, but by no means always true. I have been led astray by this idea that when I had good splints applied, no displacement would occur; but it has happened to me on several occasions that after I had done this and thought that the fragments were locked, the roentgen ray showed displacement and overriding a week or two later. There is nothing that is fool proof in this world; and if you can make it as nearly fool proof as possible, it is a good thing. Major Grove's statement that this must be done in an aseptic field is true. It is bad to put a peg into a field where there is sepsis, but sometimes one can get away with it. It sometimes works, but not often. No fracture should be treated in this way when the field is septic, if any other means can be employed to attain the end desired.

The Age of Insects.—We call the present the "age of man." Zoologically, however, it is the age of insects. There is but one species of man—*Homo sapiens*. Over 300,000 insect species have been described, and it is estimated that there are no less than 10,000,000 in the world. Naturally, a sharp edge in the struggle for life falls between mankind and this vast hoard composed largely of foes which seek to devour his person, his cattle and his fields. Our yearly insect tax for damage to agriculture and forest products alone rises millions over the billion-dollar mark—$1,018,000,000. Add to this destruction of household goods, clothing, carpets, furs and woolens and causation of disease, malaria and yellow fever, typhoid, hookworm, dysentery and the whole list of filth diseases, and the tax which insects lay on the people of this country must rise well toward the two-billion-dollar mark. . . . We howl when we pay this tax. . . . We lay the blame on the railroads and the trusts when we ought to take most of it to ourselves for not having sense enough to study insects, protect our birds and control our cats. . . . A pair of flies, beginning in April, might be progenitors, if all were to live, of 191,010,000,000,000,000,000 flies by August.—C. F. Hodge.

LUXATION OF A LUMBAR VERTEBRA AT BIRTH

REPORT OF A CASE

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In his Cyclopedia of the Diseases of Children, Keating records a statement of Scanzoni that he "had never met with luxations in the newly born, yet they occur, sometimes as congenital lesions, sometimes and not very seldom, at the hip as the result of powerful traction on the lower extremities." The dislocation of one vertebra on another is mentioned by medical writers as a possible cause of birth palsy, but a survey of the literature reveals no description nor report of a case. A brief account is recorded here of a case which may undoubtedly be considered a luxation of the first lumbar on the second lumbar vertebra, occurring at birth and causing a subsequent permanent deformity and permanent flaccid paralysis of both lower extremities below the knees.

REPORT OF A CASE

History.—Delmar R., aged 4 years, 8 months, was admitted to the Children's Hospital School in November, 1918, with the complaint of curvature of the spine.

The mother, aged 28, was very small of stature. She had had four pregnancies, the patient being the only living child. The first child was carried seven months, when labor was induced because of typhoid fever contracted by the mother. The child weighed 4 pounds and lived only a few hours. The second child is the patient, who was also carried seven months when spontaneous rupture of the membranes occurred without preceding pains. A version and breech delivery were performed under chloroform anesthesia, with considerable laceration of the mother and child. The skin was torn from both limbs of the boy, and the mother noticed a marked version of both feet. The estimated weight of the child was 2½ pounds, and the attending physician was greatly astonished to find him alive on his next visit. The child had been wrapped well in cotton by his grandmother, and for the first two weeks of life thrived on whisky and crackers! At the end of that time he was able to take the breast, and thereafter made excellent progress. At one month the mother noticed a "sinking in" of his back, which became worse as the child advanced in growth. She also was aware that his legs were motionless, and apparently paralyzed below the hip.

Fig. 1.—Patient in sitting posture.

The mother's third pregnancy terminated at seven months, the child dying after two weeks with jaundice.

During the fourth pregnancy, the mother's pelvis was found by examination and by measurement to be distinctly below normal in size. Accordingly, in the mother's language, the child "was taken from her" at four months, and her "tubes were cut" to prevent further pregnancies.

The patient's history to the present is not of particular interest. There was apparently considerable retardation in development; his first tooth appeared at 18 months, and he did not talk until 30 months of age. Massage and passive exercises of the legs were begun early, and at 18 months this treatment had overcome the outward rotation. At 2 years the Achilles tendon on the right was divided to overcome contracture. The mother reported that the child had no control of micturition, and only slight control of defecation.

Fig. 2.—Patient erect. This illustration, with Figure 1, shows the marked and irreducible deformity.

Physical Examination. — The patient was a well nourished, though underdeveloped, white child of 4 years and 8 months. The head exhibited a narrow, elongated configuration. The eyes and ears were normal. The mouth was negative except for hugely hypertrophied tonsils, and the nasal speech and obstructive breathing indicated the presence of excessive adenoid tissue. There were numerous palpable, enlarged glands in the suboccipital region and at the angle of the jaw. No other glandular enlargements were present.

The lungs were clear and the heart was normal. There was a markedly protuberant abdomen, but no abnormal masses were made out. The external genitalia were considerably retarded in development, and only the right testicle was descended.

An examination of the reflexes revealed the absence of the abdominal and cremasteric responses, an exaggeration of the knee kicks, with absence of both the ankle jerks and plantar responses on the two sides. The upper extremities were very well developed, exhibiting extraordinary power as compared to the legs.

On examining the lower extremities, one was struck by the fairly well developed thighs as compared to the helpless-looking, flail-like feet, and the puny, underdeveloped calf muscles. There was a bilateral foot drop, both feet lying in extreme equinus. A slight power of plantar flexion on the right was the only movement present below the knees. Extension at the knee was normal, but flexion was decidedly weak. The biceps femoris was absent on both sides, though the internal hamstrings were present.

At the hip all movements were present, the flexors more powerful than the extensors, resulting in a flexion deformity of 30 degrees, with extreme tightening of the fascia lata on both sides, a condition frequently met in neglected paralyses following anterior poliomyelitis.

In examining the protopathic and epicritic systems some difficulty was found, owing to the age of the child, in securing any accurate delimitation of alterations in sensitiveness. The skin above the knee was of normal appearance, but below it was blue and definitely cold to the touch. The recognition of light touch was unimpaired, but there was a definite diminution in the sensitiveness to pin pricks, although it was not entirely absent. This diminution was most marked on the lateral aspects of both lower legs over the fifth lumbar

nerve distribution. The sensations of heat and cold were well appreciated on the left, but on the right the sensibility was markedly impaired over the distribution of the fifth lumbar and first sacral nerves.

The back showed a remarkable lordosis (Figs. 1 and 2), with its apex at the level of the first and second lumbar vertebrae. There was present also a definite scoliosis, with its convexity to the right in the lumbar region, and with a rotation of the vertebral bodies to the right in the lumbar region and to the left in the dorsal region. In spite of the absence of superficial or deep-seated pain, the back was held fairly rigidly, and all movements were resisted. The scoliosis in the lumbar region could be corrected with force, but the lordosis in the sitting posture resisted complete reduction, and was not entirely corrected by flexing the thighs strongly against the abdomen.

By supporting himself on a chair, the child was able to stand, but on a very broad base. In the erect position, the lordosis was greatly pronounced, and had the appearance of a right-angled back. With help, a certain amount of progression was possible.

A roentgenogram, taken, to be sure, four years after the injury, showed anteroposteriorly a scoliosis of medium degree. Laterally, one might distinguish a distinct break in the normally regular alinement of the bodies of the vertebrae, occurring between the first and second lumbar vertebrae, exactly opposite the apex of the lordosis. By accentuating the contrasts on the roentgenogram plate this break in alinement was well shown (Fig. 3). There was no spina bifida.

Treatment. — Souttar's operation to correct the extreme flexion at the hip was performed, and the child was provided with a combined spinal and long paralytic brace designed by Dr. George E. Bennett. The brace should, with practice, enable the child to get about with considerable ease.

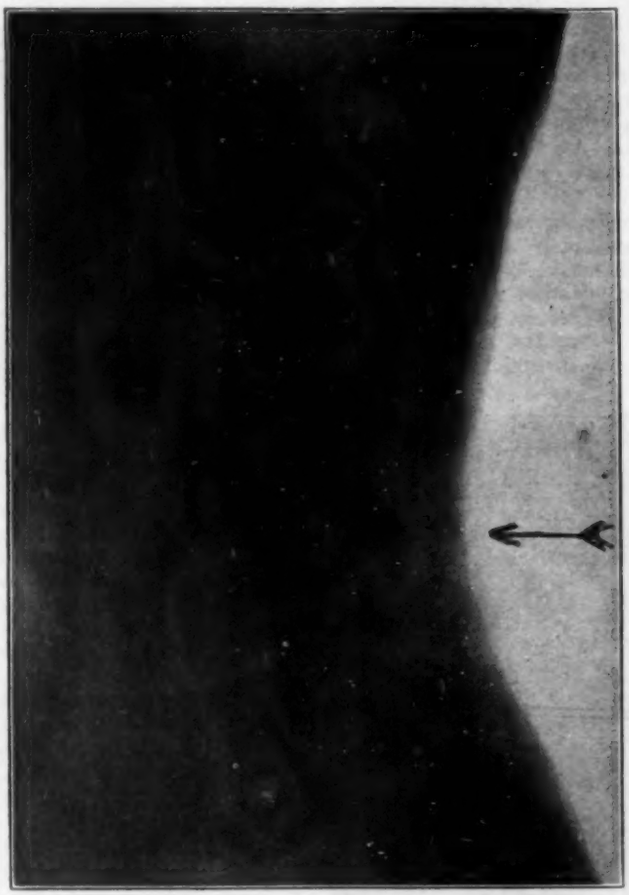

Fig. 3.—Definite break in regular alinement of vertebral bodies, four years and eight months after birth.

COMMENT

Considering the difficult delivery at birth, the very early recognition of the deformity of the back, the persistence of that deformity, the presence of a bilateral paralysis, and the fairly definite roentgenographic findings, the diagnosis of dislocation of the first lumbar on the second lumbar vertebra is almost inevitable. The elasticity of structures at birth would lead one to consider this a pure dislocation without fracture but at this late date there is no evidence for or against an accompanying fracture. Because of the close interlocking of the processes and the strength of the ligaments, the possibility of the occurrence of pure dislocation of the lumbar vertebrae was long considered doubtful. The report of two authentic cases by Blasius[1] has, however, dispelled this doubt. Brewer[2] and other authors state that pure dislocations of the spine are rare, and, of the few occurring, five sixths are in the cervical region.

As to the cause, extreme flexion or hyperextension are cited by authors as adequate methods for producing such a dislocation. A difficult breech delivery through a definitely undersized birth canal would no doubt provoke either or both of these insults.

The symptoms remaining at the present time do not correspond exactly to a lesion following dislocation of the first on the second lumbar spine. The residual symptoms point to permanent injury to the fourth and fifth lumbar and first sacral nerves, although some fibers even of these nerves seem to have escaped or recovered from injury. In fracture dislocations of the lumbar region several points of anatomy must be borne in mind: (*a*) The spinal cord ends opposite the lower border of the first lumbar vertebra; (*b*) the five lumbar nerves arise from the cord opposite the eleventh and twelfth dorsal spines, and the five sacral nerves arise from the cord opposite the first lumbar spine; (*c*) the lumbar and spinal nerves emerge from the vertebral canal considerably below their origin, and find their exit through the intervertebral foramina just below the corresponding vertebrae. Accordingly, an injury between the first and second lumbar vertebra is apt to leave the cord itself uninjured, but may involve (1) the cauda equina in whole or in part, or (2) may damage the nerve as it makes its exit from the vertebral canal through the intervertebral foramen. In either case, a partial or complete regeneration of the nerve roots might reasonably be expected, and that is probably what has occurred in this instance.

A survey of the literature reveals no mention of a similar birth injury in which the victim survived. No doubt, they have occasionally occurred with fatal consequences, and quite naturally have not been recorded. Kleinberg[3] reports a somewhat similar case which he classifies as "congenital anterior curvature of the spine." The case was also a difficult breech delivery with considerable injury to both thighs, the left femur being fractured, and for ten days following birth the child did not move either lower limb. The most prominent feature was the marked lordosis, but a lateral roentgenogram revealed no luxation. Kleinberg says, "As the condition was observed in the first few weeks

1. Blasius: Virteljahrschrift für praktische Heilkunde, **102, 103,** 1869.
2. Brewer, G. E.: Textbook of Surgery, Philadelphia, Lea & Febiger, 1903.
3. Kleinberg, Samuel: Congenital Anterior Curvature of the Spine, J. A. M. A. **66:** 736 (March 4) 1916.

of life, and then very resistant, we are warranted in considering this a genuine congenital deformity." Is it possible that this might also have been a fracture dislocation, though partially reduced, as the result of a violent manipulation at birth?

Concerning the scoliosis, it would seem that this, too, must be attributed to the injury. There is no roentgenographic evidence of the presence of any of the anomalous conditions mentioned by Bohm[4] following developmental error occurring in embryonic life, nor is there any evidence of the wedge-shaped supernumerary vertebrae reported by Fitzwilliams[5] and by Norbury.[6] Apparently one must add injury at birth to the causes of so-called congenital scoliosis.[7]

THE DELETERIOUS EFFECT OF THE ALKALIZATION OF INFANTS' FOOD *

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At the present time little regard is paid to the reaction of the milk preparations that are fed to babies. It is considered quite immaterial, for example, whether sodium bicarbonate is added to a milk formula, or whether a proprietary food is more or less alkaline in reaction. To such an extent is this the case that in stating the composition of proprietary foods, the textbooks on children's diseases content themselves with a statement of the protein, fat and carbohydrate content of the various popular preparations, giving no consideration whatsoever to their reaction. In such tables the salts are expressed in terms of percentages of total ash, the nature of the inorganic constituents being not specifically mentioned. This is true of American, English, French and German textbooks. This neglect is all the more remarkable as for some years it has been appreciated that the salts play an important rôle in infant feeding; indeed, in every effort to construct an artificial food approximating mother's milk, the salt factor has been given particular consideration.

We wish to point out that it is by no means immaterial whether we render the baby's milk more or less alkaline. What effect an addition of alkali has on proteins and other caloric food factors it is impossible, in the present state of our knowledge, even to surmise; but that this alteration has a decided effect on the vitamins is susceptible to proof. In a previous article we have shown[1] that orange juice, the prototype of antiscorbutics, and the one most relied on in infant feeding is essentially damaged within twenty-four hours by being rendered twentieth normal alkaline to phenolphthalein. In fact, orange juice of this faintly alkaline reaction was found to have lost its power to protect guinea-pigs against scurvy. It is evident, therefore, that the antiscorbutic vitamin is peculiarly sensitive to alkalization. We may add that this vitamin seems to be more sensitive to various physical and chemical influences than either the water-soluble or the fat-soluble vitamin. There is at present some difference of opinion as to the vulnerability of the water-soluble vitamin to the application of heat in an alkaline medium. There is no question, however, that this reaction renders it more susceptible to destruction.[2]

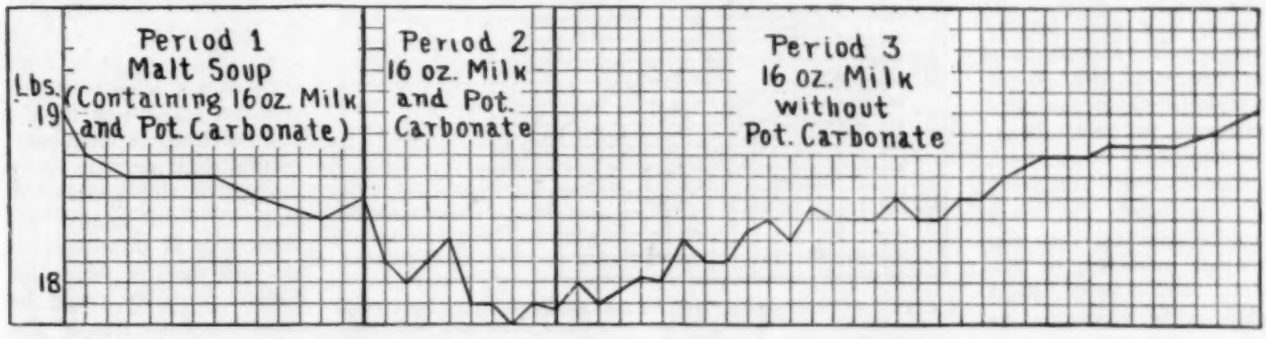

Chart 1.—Human scurvy: weight curve of a baby that developed scurvy on a diet of malt soup (Period 1). During Period 2 the flour and malt soup were omitted from the diet, the same amount of milk and potassium carbonate being continued. The disorder did not abate. The only change in Period 3 was a discontinuation of the potassium carbonate. This brought about a gain in weight and cure, showing the destructive effect of the alkali on the vitamin.

This subject was forced on our attention by the experience that milk formulas containing malt soup have an exceptional tendency to bring about scurvy in infants, unless an antiscorbutic foodstuff, such as orange juice or canned tomato, is added to the dietary. As has been brought out elsewhere, this undesirable effect might be the result of one or more of the following conditions:[3] (1) that the formulas contain an amount of milk insufficient to protect fully; (2) that the preparation is boiled as well as frequently prepared from pasteurized milk; (3) that there is a period of aging between the initial pasteurization and the boil-

4. Bohm: Boston M. & S. J., Nov. 22, 1906, and Jan. 25, 1906.
5. Fitzwilliams, D. C. L.: Proc. Roy. Soc. Med. **2**: 21, Sect. Studies on Dis. Child., 1908-1909.
6. Norbury: Proc. Roy. Soc. Med. **71**, 1913.
7. In addition to the references already given, the following will be found of interest:
Ridlon, J.: Report of Two Cases of Scoliosis Accompanied by Pressure Paralysis of the Lower Limbs. J. A. M. A. **67**: 803 (Sept. 9) 1916.
Hodgson, F. G.: Congenital Deformities of the Vertebrae and Ribs, Am. J. Orthop. Surg. **14**: 34 (Jan.) 1916.
Dwight and Rotch: The Spine in Infancy, Arch. Pediat. **8**: 161.
Le Breton, P.: Congenital Lateral Curvature of the Spine, Pediatrics **27**: 73, 1915.

* From the Bureau of Laboratories, Department of Health.
* Read before the Section on Diseases of Children at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Hess, A. F., and Unger, L. J.: Factors Affecting Antiscorbutic Value of Foods, Am. J. Dis. Child **17**: 221-240 (April) 1919.
2. McCollum, E. V., and Simmonds, N.: J. Biol. Chem. **33**: 55, 1918.
3. Malt soup is prepared by dissolving the alkaline malt soup extract in water, and mixing wheat flour with milk. These two mixtures are then boiled together for about three minutes. According to some directions, 11 ounces of milk are used; according to the formula followed by us, 16 ounces were employed.

ing of the milk and the flour; (4) that an alkali is contajned in the malt soup, and finally (5) that a considerable amount of carbohydrates in the form of flour and of malt sugar is added to the food. It seemed important, when an opportunity presented itself, to analyze this question, to determine which of these factors is at fault.

Chart 1 shows the weight curve of a baby that was receiving a diet of malt soup and cereal, with the addition of three teaspoonfuls of cod liver oil a day. It developed scurvy. The symptoms were those commonly associated with this disorder; namely, pallor, hemorrhages of the gums, tenderness of the femur, irritability, and lack of gain in weight. In view of this occurrence, an attempt was made to cure the scorbutic condition by eliminating the carbohydrate from the diet, by omitting the flour and malt sugar from the formula. In order to accomplish this, a pint of milk was prepared with the addition of sucrose and the same amount of potassium carbonate as is contained in the malt soup formula.[4] This milk, which was fresh and of excellent quality, and contained no malt or flour, was boiled for five minutes. There are many who believe that the carbohydrates, especially the starches, are of great importance in bringing about the so-called deficiency diseases, because they require a considerable amount of vitamin for their metabolism, and lead therefore to such disorders as scurvy or beriberi, if present in relatively high amount. It was found, however, that the harmful influence of the malt soup preparation could not be attributed to its high carbohydrate content, as the exclusion of the flour and the malt did not bring about an alleviation of the symptoms, or, as will be seen (Chart 1), lead to a gain in weight. As this form of treatment proved unsuccessful, it was determined to discontinue the addition of the potassium carbonate, so that the baby received a pint of milk that was boiled for five minutes without the addition of alkali. The sucrose, the cereal and the cod liver oil were continued. The result was striking. Not only did the infant gain in weight, as will be seen from the chart, but there was a marked change in its general condition and a disappearance of the various signs and symptoms enumerated above. It seems, therefore, quite evident that the alkalization of this food, which contains a limited amount of antiscorbutic material—merely that which is contained in a pint of boiled milk—was sufficient to render its antiscorbutic quota insufficient.

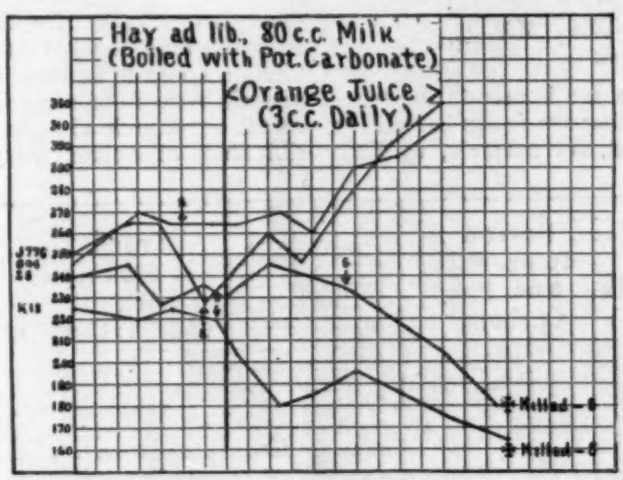

Chart 2.—Guinea-pig scurvy: All four guinea-pigs developed scurvy on a daily diet of hay and 80 c.c. of milk to which had been added the same percentage of potassium carbonate contained in the ordinary malt soup preparation and which had been boiled for five minutes. After the disorder had developed, two of the pigs (776 and 906) were given orange juice. They recovered and gained rapidly in weight in spite of the continuation of the alkali in their diet, thus proving that we were dealing with scurvy. The other two (28 and K 18) were not given orange juice, and lost weight and showed marked signs of scurvy during life and at necropsy.

As the result of this experience, an experiment on guinea-pigs was instituted. It had been shown in previous experiments that guinea-pigs weighing about 200 gm. very rarely develop scurvy when given daily 80 c.c. per capita of fresh milk. Accordingly the same percentage of potassium carbonate as is contained in malt soup was added to this amount of milk, and its effect was noted on the weight and on the clinical condition of the guinea-pigs. Ten c.c. of an 11 per cent. solution of the alkali were mixed with raw certified milk, which was then boiled for a period of five minutes. It will be seen from Chart 2 that scurvy developed in all the pigs. That this disorder was not attributable to the alkali itself is shown by the prompt response and alleviation of symptoms, when 3 c.c. of orange juice were added to the dietary, notwithstanding the fact that the potassium carbonate was still continued (Chart 2).

These results have an application far wider than their relation merely to malt soup. Investigation brought out the fact that an alkaline potassium salt is added to the greater number of our proprietary foods for infants. This is done for one of two reasons: In the first place, because it renders the food less subject to acid fermentation, and second, because the addition of potassium counterbalances the relative poverty of this salt in cow's milk. In the majority of instances, potassium bicarbonate is added in the ratio of from 2 to 2.5 per cent., instead of the carbonate, as in malt soup in a much lower percentage. In view of the clinical and experimental results that we report, the danger of this practice is evident. In many instances it is unnecessary, as a salt such as potassium citrate probably could be substituted to supply the potassium deficiency. In cases, however, in which the object is to change the acid reaction, such a substitution would, of course, not be practicable.

CONCLUSIONS

With the realization that foods contain not only caloric factors but also accessory food factors or vitamins, it is incumbent on us to revise our standards and to reconsider their entire preparation from this new point of view. It is clear that the antiscorbutic vitamin in milk is rapidly destroyed by alkalization associated with heating, and that by the thoughtless addition of alkaline proprietary foods we are robbing the infant of much of this essential foodstuff.[5] The question may be raised in this connection whether, in a similar way, we are heedlessly destroying the potency of other vitamins. It has been shown, for example, that cod liver oil is rich in at least one vitamin, the fat-soluble factor, and that it is almost a specific in

4. This is stated as 0.44 gm., or 6.79 grains, to the fluidounce, and is measured by adding 10 c.c. of an 11 per cent. solution of potassium carbonate for each liter of prepared malt soup.

5. In a discussion published soon after infantile scurvy had come to be recognized, it was asserted by a member of the Berlin Medical Society that "Riethe's albumose milk" induced scurvy. This was a popular preparation to which 0.4 gm. of potassium carbonate was added in order to change the albumin to albumose. No further attention ever was paid to this observation (Meyer, E.: Berl. klin. Wchnschr. **33**: 85, 1896).

the treatment of rickets. We have found that this oil, originally acid owing to its considerable content of organic acids, is alkaline in many of the proprietary emulsions commonly employed. It is quite possible that this alteration in reaction is not immaterial in relation to the efficacy of this valuable therapeutic agent.

16 West Eighty-Sixth Street.

ABSTRACT OF DISCUSSION

DR. HARRY LOWENBURG, Philadelphia: I should like to ask the doctor if he said that the addition of orange juice while he was administering the carbonate of potassium prevented the development of scurvy? Dr. Hess's work is very interesting and very enlightening, if it can be verified. However, it appears quite rash, on the face of it, to draw as sweeping a conclusion as he does from the study of only one sick baby and from the protocols of only four experimental guinea-pigs, in the light of vast clinical experience with many feeding cases wherein the alkalization of milk has produced no harmful effects. I have yet to see the development of scurvy in these cases. I feed many infants on malt soup extract; I never feed orange juice, although I commence the administration of comminuted green vegetables and stewed apples and prunes early. It is very difficult, indeed, to consent to have one's convictions swept aside by the meager data offered by this single case and these four experiments. I should like to see this work carried out further and confirmed. Until then I must continue to add alkali to milk mixtures where I believe it to be indicated. This is said not in the light of destructive criticism. The essayist has not provided us with sufficient data. Hence hasty conclusions may not be drawn nor accepted. It is logical to conclude from the doctor's statements that those who are using malt soup extract and alkalis should have an abundance of scurvy in their practice. This has not been my experience.

DR. JULIUS H. HESS, Chicago: When Keller first gave us the formula for making malt soup, he warned the profession against feeding this mixture for too long a period, because of the danger of developing scurvy. I have had the misfortune of placing infants on Keller's malt soup, and notwithstanding instructions the parents have remained away for from two to four months and returned with the infants showing evidences of scurvy. This has occurred three or four times. One proprietary infant's food on the market is recommended to be fed in amounts as high as three to four ounces daily. This food contains 2 per cent. of potassium bicarbonate which would result in the feeding of from 30 to 45 grains of the alkali to the quart, while the potassium bicarbonate in Keller's malt soup equals about 16 grains to the quart. A great many babies come under my observation who have been on this food for a considerable period of time, and I must confess that I have never seen a case of scurvy develop on the diet, even though it is a very one-sided one. These facts lead one to wonder why we do not see more scurvy in babies fed on the infants' foods containing potassium bicarbonate.

DR. C. G. KERLEY, New York: I have been feeding alkalis of different kinds for many years and I have had only an occasional case of scurvy, and these cases are nearly always associated with the diet of some cooked milk product and not with fresh milk. Children given fresh milk do not have scurvy whether alkalis are added or not. There must be something else, therefore, than the presence of alkalis that interferes with the vitamin content of the food. Malt soup mixtures are more apt to produce scurvy than any other diet. I never use this method of feeding without prescribing orange juice at the same time.

DR. J. P. CROZER GRIFFITH, Philadelphia: Let me call your attention for a moment to what is in a way ancient history, but no less important and true now, since conditions have not changed. I refer to the published investigations of the American Pediatric Society some years ago, as to the effect of the feeding of different kinds of food in the production of infantile scurvy. In that publication you will find that infantile scurvy followed oftener on the use of many of the proprietary infant foods of various sorts than after any other regimen. In fact, one manufacturing company was so disturbed about the matter that they made a claim that the scurvy was due to the fact that the milk mixed with the food had been boiled. It is undoubtedly true that the boiling of milk is followed by the development of scurvy in some cases, but not nearly so often as in the use of the commercial foods. I am not referring in any way to malt soup, which is not advertised to the laity but to the profession. Dr. Hess' paper is a very valuable and interesting one. He seems to have proved in the case reported that rendering the food alkaline produced scurvy. I do not think, however, that this is convincing proof that alkalis used as a routine measure are to be feared on this account. In the American Pediatric Society's report there were mentioned ten cases of scurvy occurring in infants fed solely on breast milk. That would not prove that breast milk is to be avoided. I have fed hundreds of infants with malt soup preparations, since it is a very favorite food with me, but I have yet to see a case of scurvy following its use. It should be said, too, that in many cases the pasteurizing or sterilizing of milk serves such a very useful purpose and tends to prevent diseases so much more serious and common than scurvy, that it would be foolish to avoid its use, especially since any tendency which it may have to produce this disease can readily be obviated by the administration of orange juice. Indeed, the fact that scurvy is uncommon, considering the vast number of babies artificially fed on boiled milk, pasteurized milk, alkaline foods, and many other foods, is an indication that we do not yet know all there is to know about the etiology of this disease.

DR. ST. GEORGE T. GRINNAN, Richmond, Va.: Some of you have said that scurvy is rare. It certainly is not in Richmond. I was in New York about two years ago and heard Dr. Hess read a paper and Dr. Kerley discuss it. I went back and looked up the subject of scurvy more than I had before, and I have seen more cases in the last two years than I had in the ten years before. I found that there was a very large sale there of a certain proprietary food, and I found many cases of scurvy in the babies fed with this food.

DR. JOSEPH GROVER, Boston: I feel sure that scurvy is not a rare disease. In the Children's Hospital in Boston we see one case every two, three or four days. I think boiled or pasteurized milk causes it a great deal, but the dry foods cause it more frequently still. The use of certain dry proprietary foods over a period of two or three months is fairly sure to bring on the first symptoms of scurvy.

DR. LEWIS HILL, Boston: I have used the food to which Dr. Grinnan referred a great deal and I have never seen a case of scurvy develop while it was being fed. This food is only carbohydrate with a little vegetable protein and salts. It should not be called a food. It is malt sugar and should be used as malt sugar, to which is added a reasonable amount of milk, orange juice or cereal, or some other food. I believe it is a good preparation and no more likely to produce scurvy than any other sugar is.

DR. EFFA V. DAVIS, Chicago: I am rising to voice my protest against condemning a malt sugar which happens to be called a food. It is malt sugar made from wheat. We have been discussing corn syrup; dextrimaltose is now made from corn. It was formerly made from potatoes. I think we may as well face what is being placed on the market and understand it first hand, rather than condemn a thing on theory. I have tried the "malt food" in the modifying of raw milk for the past two years in my nursery, where I have from ten to fifteen artificially fed infants, without the development of scurvy. I know there is a certain percentage of potassium carbonate in the food. About six months ago, my attention was called to the fact that sodium bicarbonate added in the usual housewife's method of cooking beans destroyed the vitamins. From that hint I began to drop it in making bean soup, which I give my babies in their second year as well as the early use of antiscorbutic elements, such

as vegetables, fruit juices, etc., from the seventh or eighth month. To go back ten years is a little ancient. We made other mistakes then which affected our results, such as feeding every two hours, for example. I think the alkalinity of infants' food is still an open question.

Dr. Emanuel C. Fleischner, San Francisco: It seems to me that we are losing sight of what Dr. Hess wishes to bring before us. I do not think it is his purpose to pass on the entire etiology of scurvy. I have seen a large number of his experimental animals, and I think no one can doubt he has demonstrated thoroughly, that with a certain fixed amount of raw cow's milk he is able to determine in an exact manner that he can keep guinea-pigs free from scurvy. Giving animals the same amount of cow's milk which under ordinary circumstances keeps them free from the condition, and by alkalizing this food to a certain extent, he has shown that the antiscorbutic vitamin is destroyed. In other words, our attention must be directed toward the fact that a high percentage of alkali in artificial foods, if we are giving a quantity of milk which is just sufficient to prevent scurvy, can destroy a sufficient amount of the vitamin in that milk to produce the disease although it may be in a very mild state. It does not seem to me that in his paper he has tried to convey to us that all cases of scurvy are due to highly alkaline foods, and I am sure that he has not tried to prove that proprietary foods are always responsible for the disease. All of us know that we can use proprietary foods of practically all types, even with high alkaline content, if we are giving these children a large amount of raw milk. In other words, they are getting enough vitamin to prevent the development of scorbutus, notwithstanding that the alkali destroys a portion of the antiscorbutic element. It seems to me that Dr. Hess has developed a very interesting and scientific fact in this connection.

Dr. F. C. Neff, Kansas City, Mo.: I should like to ask Dr. Hess one question. Within the past year a sugar to which potassium carbonate was added was marketed with the definite statement that it was to be used instead of other preparations for the relief of constipation. I want to ask what the findings are with regard to that. I have seen no effect whatever on constipation by the addition of potassium carbonate.

Dr. A. F. Hess, New York: I do not see how we can do that, especially with the malt soup and some of the other things. Dr. Lowenburg said that he had never seen scurvy develop on malt soup. I think Dr. Kerley has answered that. If I put a hundred children on malt soup without any antiscorbutic I will get almost 100 cases of scurvy. By scurvy I do not mean the active cases that sometimes are waited for, with the bulging red gums and the hemorrhages. I mean the mild cases with pallor, loss of weight, tenderness, irritability, and a few petechiae. Those cases will develop more frequently on malt soup than on any other food. Malt soup, according to the way it is made in the final preparation, contains 0.1 per cent. potassium carbonate. It is quite different from the others, and that explains why malt soup is so prone to produce scurvy. As regards the animal experiments I described only four, but I could have described many more. I do not know of any essential particular in which animal scurvy differs from human scurvy. I have never found any. An antiscorbutic for the guinea-pig is antiscorbutic for humans. I have tested many hundreds of guinea-pigs in the last few years, and found that what will produce scurvy in the guinea-pig leads to it in the baby, so that we can accept, as far as I know, animal scurvy for interpretations of human scurvy. As to the dry food, I do not think that it is the drying of these proprietary foods that leads to scurvy, because, as I have recently shown, dry milk, subject to a temperature of 240 F., for two or three seconds still retains its antiscorbutic property and when made up to the equivalent of fresh milk is able to protect guinea-pigs against scurvy.

Trained Nurse.—A trained nurse does not always enjoy being a sanitary policeman, but some one must do it if the treatment is to be carried out.—*Bulletin*, State Board of Health of Rhode Island, August, 1919.

IMPROVISED ORTHOPEDIC EXERCISING APPARATUS *

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Captain, M. C., U. S. Army
FORT SHERIDAN, ILL.

During June, 1918, at Camp Cody, New Mexico, the camp orthopedic staff was confronted with the necessity of carrying out, on a large scale, many specialized corrective gymnastic exercises for soldiers and recruits among whom were found all of the whole gamut of orthopedic defects: weak feet; contractures of the finger, wrist and larger joints; limitation of motion of various joints incident to recent fractures, etc. For this work, the medical department provided the orthopedic staff absolutely nothing in the way of ready-made orthopedic apparatus, such as Zander machines, and at that time the principles of vocational reconstruction had not made such appliances available. The schedule of gymnastics included specialized calisthenic exercise without apparatus, supplemented by a general daily routine suited to the individual needs of the men. Although excellent results were secured, it seemed to me that the end results might be augmented by the employment of apparatus designed to assist in corrective and developmental work.

Fig. 1.—Hurdle for exercising ankle and knee.

APPARATUS FOR THE LOWER EXTREMITY

Realizing the need of apparatus to facilitate flexion and extension of the foot and knee, we devised wooden steps, having a rise of 6 inches and a tread of the same dimension, arranged in such a way that the patient walked up four and down the same number. Wooden hurdles, 8 inches high, were made (Fig. 1). These were placed at variable distances, and each man stepped over them in such a way that his foot passed directly over the hurdle, necessitating flexion and extension at the knee, and extension of the foot.

The success of this simple device, which was no doubt partly due to its novelty, encouraged us in attempting other appliances. We tried to procure an old sewing machine to stimulate dorsal and plantar flexion by pedaling, but were unable to do so, and decided to build its equivalent. Through the courtesy of the reclamation and conservation officer, we obtained a fly-wheel of a washing machine. Short pieces

* Read before the Section on Orthopedic Surgery at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

of various sizes of lumber were obtained through the courtesy of the construction quartermaster. A frame, 36 inches high and 24 inches square (Fig. 2), was constructed out of two-by-fours. An offset was attached to the right side, and in the inside of the frame, to which was attached the fly-wheel, 24 inches in diameter. The foot-pedal, which was the chief mechanical feature, made of 2 by 10 lumber, rested on an elevation from the base, which was similar to that of a sewing machine, and it was joined to the fly-wheel by means of a wooden connection rod. The patient's seat was built to the frame, and his feet were strapped to the pedal. The efforts to force the fly-wheel gave the desired dorsal and plantar flexion with resistance, which was graduated by an adjustable brake.

Another machine, similar to the one described, was constructed, in which the pedal was hinged to the frame in such a way as to bring the fulcrum at the far end of the pedal, and in this way a wider range of dorsal and plantar flexion was obtained.

Fig. 2.—Pedaling machine for exercising ankle and knee.

Fig. 3.—Bicycle for exercising ankle and knee.

Fig. 4.—Foot exercising board.

The Red Cross obtained for us an old bicycle, which included the frame, saddle, sprocket, chain, and rear axle and gear only. This was fixed upright on the floor by means of a wooden frame (Fig. 3), and a rear wheel was constructed entirely of wood. Pedals, which were 10 inches long, also had to be improvised of wood. The feet were strapped to them, and, by putting the pedals into motion, flexion and extension of the hips and knees, as well as dorsal and plantar flexion, were obtained. Resistance was graduated as in the other apparatus, by means of a brake.

For patients afflicted with weak feet, with abduction and pronation, we used boards (Fig. 4) on which men received systematic exercises in their bare feet. Short strips of 2 by 10 lumber, 12 inches long, were cut down into double inclined planes of 120 degrees, with the apexes upward. The distal end of the board was cut to a point forming an angle of 120 degrees, and this point was notched out into a semicircle. In this way, dorsal and plantar flexion were easily obtained from the metatarsophalangeal joint, when the man stood on the board with his feet parallel and 3 inches apart, and his toes over the distal end of the board, while the incline placed the feet in adduction and supination.

For the same purpose, a long runway was constructed in the shape of a double inclined plane, with the apex pointing upward at an angle of 120 degrees, and the men were instructed to walk along this incline with feet parallel, or toeing slightly inward.

APPARATUS FOR THE UPPER EXTREMITY

In considering apparatus for the upper extremity, we first attempted to construct exercisers. The available materials consisted of discarded pulleys, rope and old shell casings filled with sand for weights. Handles were made from broom sticks and No. 6 galvanized iron wire. Three types were constructed: The first, in which the pull was from above downward and required only two pulleys, firmly attached to the ceiling, over which the rope was suspended with the weights and handles on either side. The second, in which the pull was on a horizontal plane and required four pulleys. The first two were attached to the wall, 4 feet from the floor, and 2 feet apart. The second two were suspended from the wall 3 feet above and 6 inches to the outside of the vertical plane of the lower pair. The rope extended from the handles through the lower set of pulleys, then through the upper set, and to the shell casings. In the third type, the pull was from below upward, and also required four pulleys. The first two pulleys were attached to the floor at the junction of the wall and 3 feet apart, and the second two were attached to the wall 6 feet above and 6 inches to the outside of the vertical plane of the lower ones. From the handles, the rope extended first through the lower set of pulleys, then through the upper set, and finally to the weights.

For exercising the deltoid muscle and for producing circumduction of the shoulder joint, we employed a large fly-wheel, 30 inches in diameter, salvaged from a washing machine (Fig. 5). This wheel revolved on an axle which was fixed at one end to a metal bracket, a part of the original washing machine. It was mounted

on a wooden offset 5 feet from the floor, and in such a way that the axle projected horizontally at right angles to the wall. A wooden handle was inserted into the rim, and a wooden brake was applied against the rim, the pressure being regulated to suit the needs of the patients.

An apparatus for pronation and supination exercise of the forearm was thus constructed: A piece of two-by-four about 20 inches long was trimmed down at each end to leave two cylindric projections like the handles of a rolling-pin (Fig. 6). It was mounted on a pair of wooden brackets fastened to the wall, 30 inches from the floor, in a position similar to that for a roller towel rack, and was then perforated in the center at right angles to its long axis, a hole being made of the right size to receive snugly the shaft of a sawed-off shovel handle, which was pushed through it with the handle on its near side, and the shaft projecting toward the wall. Two wooden pins driven through the shovel handle, one on either side of the crosspiece, fixed the shovel handle in this position without preventing its free rotation in the hole. At the distal end of the shovel handle, and at right angles to it, there was attached a stout lever arm 6 inches long, and from this a weight was suspended. Whereas this machine was devised merely for pronation and supination exercises by rotating the shovel handle, the roller bearing permitted an adjustment for the height of the man.

We constructed another appliance, similar in every detail to the pronation and supination machine, with the exception that the shaft of the shovel handle moved in a large oval opening, thus giving the handle a wider range of movement.

To produce circumduction at the wrist, we mounted a wheel with its axle on a wooden bracket in the same position as the wheel in the shoulder circumduction apparatus, with the exception that the axle was 3 feet high (Fig. 7). The wheel was 12 inches in diameter, and it also was obtained from the reclamation department. A wooden arm support was mounted on a level with the axle, at right angles to the plane of the wheel, and 12 inches away from it. The arm was fixed to the support by means of straps in such a position that the carpometacarpal joint rested on the edge of the support. The patient grasped a discarded screw driver in his hand, and placing the shaft between the spokes, propelled the wheel. Thus, the desired circumduction was obtained.

Fig. 5.—Shoulder circumduction machine.

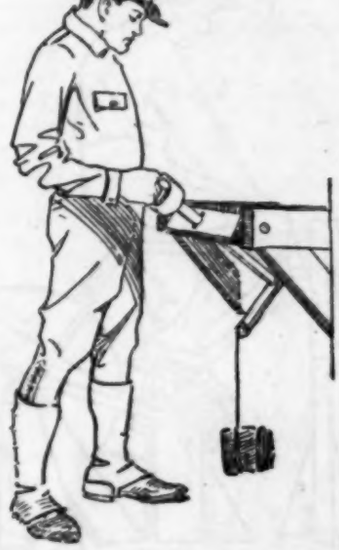

Fig. 6.—Pronation and supination apparatus.

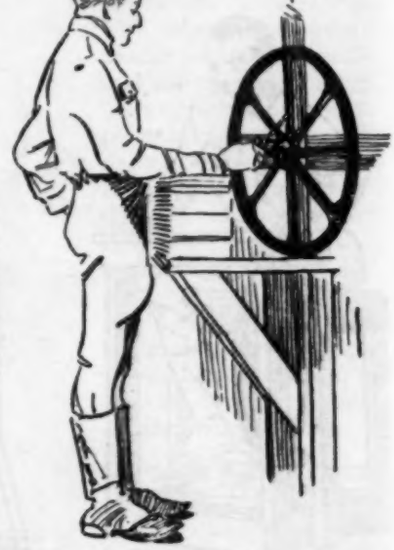

Fig. 7.—Wrist circumduction apparatus.

APPARATUS FOR GENERAL EXERCISE

For the purpose of obtaining general exercise, a rowing machine was suggested. Two uprights were built to the floor out of two-by-fours 30 inches high, 4 feet apart and 4 feet from the wall (Fig. 8). Oars were constructed out of two-by-fours, 3 feet long, the ends of which were whittled down for handles. The oars were pivoted to the uprights through their centers by means of discarded motor valve stems. Two pulleys were fastened to the wall at the same height and immediately behind the distal ends of the oars, and two more placed 3 feet above and 6 inches outside of the vertical planes of the lower set. Ropes were tied to the distal ends of the oars and extended through the lower pair of pulleys, then through the upper pair to the two shell casings filled with clay as weights. A seat was mounted behind the oars with three foot-rails in front. Four rollers attached to the bottom of the seat permitted free backward and forward motion on a wooden track. The novelty of this device proved to be quite attractive to the men, and they took great advantage of it.

COMMENT

The purpose of this brief review of the practical application of well known scientific principles in the crude apparatus devised will be served if I have been able to demonstrate the early approach thereby to the larger field which concerns us now as orthopedic surgeons, namely, the application of the principles of vocational training and reeducation to the wounded soldiers returning to our reconstruction hospitals. It is believed that the success attained in the service at Camp Cody will be encouraging to those who may be called on to make an effort at rehabilitation in centers where modern means of vocational training may not be readily available.

ABSTRACT OF DISCUSSION

DR. ZABDIEL B. ADAMS, Boston: I had an opportunity of going to a school in France, just outside of Paris, where the French were reclaiming the men who had been slightly wounded or who had been discarded in the draft; and there, the apparatus used was very much the type that has been described in the paper—that is, apparatus that was made out of practically anything found on the premises. They had a few things that have not been thought of, apparently, in this country—at least, not described in this paper—which were original and simple. One of these was a double inclined plane, which they used to increase the flexion of the hip, knee and ankle. It consisted of a plane made of two boards, about ten or twelve inches wide, sloping up to 33 cm. in the center, and about eighteen feet long. The men took hold of a rail atached to the wall and, putting one foot on this inclined plane, and keeping the other on the floor, would start with the foot at a low level on the plane, and gradually push the lame foot up and swing back and forth; so that when they got to the top of the inclined plane, they would have complete flexion of the knee, ankle and hip. Then they had a very fine apparatus for limbering up the hand, consisting of a wooden bottle; and for supination and pronation, a machine something like that described here, with a handle like a shovel, which they twisted. They used, also, the chest weights and rowing machine.

Fig. 8.—Rowing machine.

DR. RUDOLPH S. REICH, Cleveland: We had a great many other devices there that I did not describe. We felt that by improvising apparatus we could construct almost anything that the condition we happened to be dealing with might require. We could improvise apparatus that would be applicable to any condition that we were confronted with. Another thing that I should like to mention is the practical application of this to civilian orthopedic work. Many hospitals cannot afford to buy expensive apparatus; and very good articles can, I think, be constructed, which will serve the purpose very successfully, although they may, perhaps, not be quite so elaborate as the purchased apparatus.

The Rat.—A recent bulletin of the U. S. Public Health Service discusses the increasing depredations of rats. It is estimated that there is one rat at least for every person in the United States. The annual cost of the rodents is probably $180,000,000 per year. However, the rats are not only a severe economic loss, but also a public health menace, since they have been incriminated as carriers of several diseases: for example, plague and more recently icterohemorrhagic spirochetosis. Rats are frequently found infected with intestinal parasites, such as tapeworm and with trichina. It is stated that there are three kinds of rats in this country included in the survey. Chief of these is the brown or Norway rat, which has largely superseded the other varieties. The primary measure suggested for destroying rats is the rat-proofing of buildings.

Clinical Notes, Suggestions, and New Instruments

A MODIFICATION OF ANDREW'S BOTTLE OPERATION FOR HYDROCELE

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Visiting Surgeon, City Hospital

This modification differs from the original only in the skin incision, evacuation of the contents of the sac, and delivery of the testicle. Some time ago it occurred to me that an incision beginning over the cord, near the spine of the pubis, extending outward and upward along the ligamentum inguinale, might have certain advantages over the usual anterior scrotal incision of the older operations:

1. With this procedure it is not necessary to hold the scrotum in the gloved hand in order to draw the skin tense over the hydrocele while making the skin incision. Since, because of its very nature, the scrotal tissue is difficult to sterilize properly, this lessens the liability of infection. Some infected wounds of scrotal tissue heal readily; some do not. If the incision is made in such a manner as not to involve the scrotal tissue, the convalescence may be more rapid.

2. The incision over the cord obviates the careful dissection necessary when approaching the hydrocele through the scrotal tissue. When the cord is exposed, slight traction with gauze will bring the funicular portion of the sac into the lower angle of the incision. Gentle pressure with the index finger will indicate a point of fluctuation. A needle is introduced at this point without danger of injury to the cord, testicle or epididymis. The contents of the sac are withdrawn, and the testicle and sac, of any size, may be delivered without the least difficulty. If the needle is left in the sac during and after its delivery, the identification of the tunica vaginalis testis resolves itself into a simple matter.

3. The operation is completed in accordance with the technic of the usual Andrew bottle operation, and the testicle is returned to its former bed.

305 Boyle Building.

EXFOLIATIVE DERMATITIS, COMPLICATED WITH CELLULITIS, OBLITERATIVE ARTERITIS AND GANGRENE OF TOES, DUE TO ARSPHENAMIN(?)*

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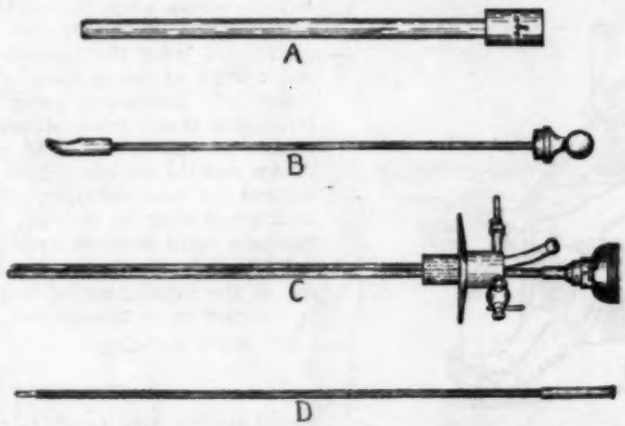
Superintendent, State Infirmary

S. J., colored woman, aged 28, married, was arrested, Oct. 30, 1918, and sent to the house of correction for six months on a charge of lewdness and wantonness. She was a strong, robust young woman without any special organic trouble. Her blood gave a Wassermann test of + + + + by cholesterin and + + + by alcoholic extract of guinea-pig's heart. Specific trouble of any known character was denied. Nov. 15, 1918, she was given 0.3 gm. of arsphenamin intravenously in the left arm, and some of the drug entering into the adjoining tissues set up a marked local inflammation, with contracture of the tendon of the biceps. This condition of contracture called for energetic treatment by massage and mechanotherapeutics, such as carrying a weight in the hand and daily increasing the load to overcome the tendency to contract. In connection with this local infection she had a severe systemic disturbance. The second injection was given, Jan. 31, 1919, and no severe reaction was noted, nor was there from the third and fourth. February 24, she reacted badly to the fifth injection, and the left arm showed a neuritis and inflammation. After the sixth treatment of 0.3 gm. of arsphenamin, March 7, the patient showed an eczema of the skin, which gradually became more marked, and showed desquamation of the skin in large flakes, especially about the

* Case presented at the Clinic held at the State Infirmary, Howard, R. I., for the Annual Meeting of the Kent County Medical Society, June 19, 1919.

hands and feet. The skin previous to the desquamative process was of a glowing, dusky red, and a sharp rise in temperature was noted. A diagnosis of exfoliative dermatitis was made, and corroborated by Major Harry W. Kimball, member of the Public Health Service and director of venereal clinics of Rhode Island. Between the dates of March 7 and April 6, the patient had suffered greatly from pain in both feet resembling rheumatism, and a marked cellulitis made its appearance. The face, hands and feet were the worst affected. This trouble finally cleared up with medication of alcohol dressings. The pain and numbness in the limbs became localized in the right foot; numbness and tingling were prominent with a marked puffiness of skin over half of the dorsum of the foot, involving the proximal ends of the toes. A darkened, fan-shaped area developed, spreading over the skin of the four greater toes. This became more boggy, and broke down with the tissues beneath looking gangrenous. In spite of medicaments, this process became more firmly localized, involving the four larger toes, and the tip of the little toe.

The gangrene soon assumed the characters of the dry type with a fair line of demarcation at the metatarsal joint. May 1, the four toes were amputated. The tissues of the foot were gangrenous and "porky" in character, and hardly any hemorrhage occurred. No hemostatic forceps were needed. The flaps were sutured with catgut, and heat was applied to the feet. We were under the impression at the time of operation that a secondary or Lisfranc operation would have to be performed because of the bloodless condition of the tissues, even beyond the line of demarcation. During etherization the patient had a peculiar tremor which was most marked in the lower limbs, and more especially the left, and the opinion was that this might be epileptic in character, as the patient seemed to be of a neurotic type. The tissues, since the operation, have healed very slowly, responding best to an ointment containing red mercuric iodid, other dressings causing a painful burning sensation of the stump. At this date (July 16, 1919), she can get about with the aid of a cane, is in good physical condition apparently, and on April 6 her Wassermann test proved negative.



Operating urethroscope: *A*, tube; *B*, obturator; *C*, bundle containing all working parts of instrument—light, telescope, cannula and water inlet; *D*, removable cannula with deflecting orifice for catheterizing strictures.

COMMENT

In looking up the causes of the obliterative arteritis, which in this case evidently took place in the dorsalis pedis artery, we find that authors consider this condition rare. Allbutt[1] says:

"In amputations that have been practiced it has been noticed that the arteries do not bleed and the wound heals with difficulty unless the amputations have been made high above the seat of mortification. . . . The condition is rare; syphilis in some of the cases appears to have been the principal etiologic factor. The symptoms are various according to the arteries affected and the rapidity of the process of occlusion; if it be gradual there is time for the establishment of collateral circulation, and there is no functional defect."

In the case herewith recorded, the process was fairly rapid and the destruction of tissue complete. In those cases of obliterative arteritis that are mentioned by various authors, larger vessels are as a rule affected. We were inclined to believe this condition might have been due to syphilis, as suggested by Allbutt; but in the discussion that followed the presentation of this case to our clinic, Dr. Kimball gave it as his opinion that the obliterative process was caused by the lodgment of arsenic in the circulation and tissues, and the case as reported by Latham[2] would bear him out in this statement; also the last Wassermann test of the patient, which was made, April 6, 1919, gave a negative reaction. This would lead us to the supposition that the cause was not syphilitic, but a case of arsenical deposition in the system.

1. Allbutt, T. C., and Rolleston, H. D.: A System of Medicine, New York, the Macmillan Company, **6**: 301, 1905.

2. Latham, J. R.: Exfoliative Dermatitis Due to Arsphenamin, J. A. M. A. **73**: 14 (July 5) 1919.

THE EASY PENETRATION OF URETHRAL STRICTURES

OPERATING URETHROSCOPE OF THE GERRINGER TYPE

MAXIMILIAN STERN, M.D., NEW YORK

It is a mistake to make repeated and protracted efforts to penetrate an inflammatory stricture of minute caliber with filiforms and sounds, in a patient suffering with acute retention of the urine. He is generally in an anxious and desperate state, in consequence of hours of futile efforts on his part to void, and frequently because of the efforts of others to pass instruments.

To have at hand an instrument with which the penetration of a stricture becomes certain of accomplishment is a great comfort. This operating urethroscope consists of an ordinary endoscopic tube, slightly longer than those in ordinary use, into which the three essential working parts are inserted in one compact bundle. This bundle comprises the telescope, which is of the direct vision type, the light carrier, and the cannula or instrument channel. The bundle fits into the tube accurately by means of a water-tight sleeve, so as to permit of focusing backward or forward with the telescope and also the rotation of the inner bundle in efforts to catheterize a stricture from various angles, without the loss of water at the ocular end. This is an important feature, water pressure within the tube being essential. Dilatation of the stricture orifice with water makes it easy of identification and instrumentation, especially when bands or a cribriform opening are present. The cannula is so constructed that the catheter or filiform is always directed toward the center of the field, so that by revolving the inner bundle while holding the tube firmly against the face of the stricture, one can approach it from any angle with a catheter. This is an advantage, because the lumen may be tortuous and the orifice eccentric.

The fact that all the moving parts are included in the inner bundle makes the necessary manipulations possible without changing the position of the tube against the face of the stricture.

I have selected a ureteral catheter rather than a filiform so that it may be fixed to the glans penis and be allowed to remain in the bladder for twenty-four or forty-eight hours. In this way, drainage into a receptacle is accomplished and the patient can obtain hours of undisturbed sleep.

The instrument here illustrated is also applicable to all the purposes of a direct vision cystoscope.

219 West Eighty-First Street.

Nasal Breathing.—Every parent, as soon as he learns that a child has nasal obstruction, should have the child examined and treated by a physician and should take the necessary steps to restore the nasal breathing. Nasal breathing is Nature's safeguard against infection and lowered vitality.—*Pub. Health*, Michigan, September, 1919.

BATHS FOR BURNS

DAVIS FORSTER, M.D., NEW SMYRNA, FLA.
Resident Surgeon, Forster Sanatorium

REPORT OF CASE

A boy, aged 16, burned in an explosion on a gasoline launch and having come through fire to make his escape, was brought by automobile 50 miles, wrapped in a sheet, to the hospital, and was admitted at midnight, July 13, 1919. He was burned on the brow, both ears, the face, nose, mouth, neck, left forearm and hand, right arm, forearm and hand, including the axilla and across the back, down to and on the buttocks and posterior surfaces of the thighs, abdomen and the anterior surfaces of the thighs to the knees. It will be seen that the only uninjured parts by which the patient could be handled were his right arm, both legs below the knee, and his hair, of which he had a large mop. He was well saturated with a hypnotic, and when aroused was delirious.

He was cleansed with surgical solution of chlorinated soda (Dakin's solution), wrapped in packs of this constantly renewed, and after finally being dried, was coated with paraffin applied with a cotton mop. Parts were covered with large meshed paraffin gauze, which was found unsuccessful, as the constant rolling of the patient caused the stiff wax-laden gauze to become detached. Therefore a light meshed dressing gauze was substituted with better results. The patient was dressed daily with the paraffin, encouraged to drink water freely, was kept on a strictly milk diet, administered every three hours, and had one-fourth grain of morphin sulphate as his condition required.

He voided scantily at twelve hour intervals, the urine being of a syrupy consistency. The bowels were moved by enema. He gradually became more and more septic, the stench being overwhelming. Green flies gathered on the screen outside of his window. The temperature went to 102, pulse 146, respiration 39.

On the fifth day, acting on a suggestion for hot boric acid fomentations,[1] we decided to place the patient in a bath-tub full of warm 2 per cent. boric acid solution, which we maintained at a temperature of between 90 and 100 F., warming to the patient's desire and cooling when he seemed exhausted.

He remained in the bath one hour, and on being removed, voided 16 ounces of urine. We felt that he had absorbed a large amount of fluid through his denuded tissue and that the flushing of the kidneys was a happy accompaniment of the mechanical cleansing. When he was taken from the solution, the bleeding parts, particularly the buttocks, were coated with an ointment having a petroleum base, while the rest was treated with paraffin after drying. If the surface is not dried, the application is very painful.

The results of the immersion were so favorable that the next day we kept him in the solution three hours, detaching dead skin and large sloughs. The baths continued daily, changing from boric acid solution to physiologic sodium chlorid solution. The sloughing on the right side of the neck was so extensive that it was feared that a permanent contracture would hold the head in the one-sided position the patient constantly maintained; but gradually the condition improved.

It was remarkable to see the skin come in over the raw surfaces, growing as much as an inch in a day to cover a surface as large as two outspread hands. The immersion assisted in detaching adherent particles of dressing and débris, thus avoiding the rubbing which would have detached tender growths of epithelium.

At the end of three weeks the patient was on his feet, walking in the sunshine, and in four weeks was discharged "rough healed" with only the right ear unhealed, which had an abscess of the cartilaginous structures.

We have since treated a less severe case with as satisfactory results.

1. New Horison Collection of Medical and Surgical Therapy, issued under the Surgeon-Generals of the United States and the British Armies 5: 780.

ACCIDENTAL PERFORATION OF THE UTERUS DURING CURETTAGE, WITH LACERATION OF THE SMALL INTESTINE

REPORT OF CASE WITH OPERATION AND RECOVERY

JOHN T. WILLIAMS, M.D., BOSTON
Assistant Visiting Surgeon, Boston City Hospital; Assistant in Gynecology, Medical School of Harvard University

Accidental perforation of the uterus during curettage is undoubtedly of frequent occurrence, but for obvious reasons it is seldom reported. It may happen at the hands of a skilful surgeon, and if proper asepsis has been maintained, and the perforation is recognized immediately, harm seldom results. If, however, the perforation is not recognized as soon as it is made, the operator may continue to curet through the perforation, bringing down a loop of intestine (usually ileum), and, as in the case to be reported, severing the bowel from its mesentery before identifying it.

REPORT OF CASE

Mrs. R., aged 27, had had several previous miscarriages. The Wassermann reaction was + + +. June 29, 1919, being about three and a half months pregnant, she started to miscarry. She was curetted at her home by a local physician, who perforated the uterus, drew down a loop of small intestine, severed it from its mesentery, and tore it completely across before he recognized what he had done.

The patient was admitted about one hour later to the gynecologic service of the Boston City Hospital, where I saw her. She was in good condition, not bleeding, but had several inches of lacerated intestine protruding from the vulva. The abdomen was immediately opened, and the conditions found were these: The ileum was completely torn across about 12 inches from the cecum. The proximal portion had been separated from its mesentery for a distance of 12 inches and passed down through a ragged opening about 1 inch in length in the fundus uteri near the right cornu. The free edge of the mesentery was lacerated, ragged and bruised in appearance. There was a small amount of bloody fluid free in the peritoneal cavity, but no feces.

The loop of ileum that had been separated from its mesentery was resected, the part that passed through the perforation being tied off and withdrawn from below to avoid contamination of the peritoneum by dragging up through the abdomen the portion that had projected from the vulva. The lacerated distal end of the bowel and the bruised margin of the mesentery were trimmed away to get clean-cut tissues to bring together. An end-to-end anastomosis was done, the Connell suture of catgut, reinforced by a continuous suture of Pagenstecher to the peritoneum, being used. The edges of the rent in the uterus were trimmed away into clean tissue, and the perforation was closed with interrupted catgut (one layer). A perforation in the distal portion of the ileum about the size of a pinhead was found and closed by a purse-string suture of Pagenstecher. The peritoneum was carefully cleaned by gentle mopping with moist sponges. A cigaret wick was passed to the pelvis. The abdomen was closed.

As the absence of bleeding was taken to indicate that the uterus was empty, nothing was done to the uterine cavity, and the patient was quickly put to bed and the Murphy-Fowler treatment instituted. She made an uninterrupted recovery. The drain was shortened on the fourth, fifth and sixth days, and was entirely removed on the seventh. There was no drainage from the wound except serum, and the patient left the hospital on the eighteenth day, well except for a granulating sinus at the site of drainage one-half inch in depth.

483 Beacon Street.

Public Health Nursing.—Although a visiting nurse began work in Liverpool sixty years ago, as late as 1901 there were only fifty-three visiting nursing associations and 136 visiting nurses in this country. In 1915 there were 2,066 associations and 4,893 visiting nurses.—*Bulletin*, State Board of Health of Rhode Island, August, 1919.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

THE NEW PHARMACOPEIA

In May of 1920, work on a new revision of the United States Pharmacopeia will be commenced. Now is the time to gather information for use on that occasion. Physicians are invited to call attention, through this department, to changes that should be made in the next Pharmacopeia. In the past, physicians have taken altogether too little interest in pharmacopeial revisions. They have permitted pharmacists and laboratory workers to model the pharmacopeia, and then the practitioners have complained when they did not find the official book to their liking. Let us have a more general participation of the medical profession in the coming revision.

PRACTICAL CLINICAL PROGRESS

If every busy practitioner would publish once or twice in his life some fact—not opinion—in therapeutics, not generally known and that he has established beyond the possibility of any doubt, what a mine of practical information would accumulate! A tremendous amount of knowledge of the greatest possible importance to suffering humanity is lost, because it is buried with its possessors. This is not due to lack of altruism on the part of the medical profession—for who of all men is more altruistic than the doctor—but to the fact that the rank and file of physicians is literarily inarticulate. While some write too much, many publish too little.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 1287*)

CATHARSIS AS A CAUSE OF CONSTIPATION

HABITUAL CONSTIPATION

In the cure of habitual constipation, cathartics, if properly used, are of help. While some who do not accept patients unwilling to submit to a regular course of treatment covering a period of from six to seven weeks, may well say that they have not used medicines in the curative treatment of constipation for many years, and that the results obtained from the non-medicinal plan—which includes diet, mechanotherapy, hydrotherapy and electrotherapy—have been vastly superior to those accomplished by drugs, yet many patients are unable or unwilling to undertake such prolonged courses of treatment. The knowledge that descending dosage of cathartics, accompanied by appropriate regulation of hygiene, will often cure habitual constipation without recourse to physical therapy, is of practical importance. For this purpose cascara sagrada is the remedy *par excellence*. The treatment amounts to a gradual weaning of the patient from the cathartic habit, as contrasted with the sudden breaking in on this habit by the acathartic method. Cases that resist the gradual dose reduction might still be cured by recourse to physical therapy, which should be offered as soon as it becomes evident that the simpler method failed, but not before. To speak of this to the patient earlier would be a tactical error, as it would undermine much of the patient's confidence in the treatment, and with this its psychotherapeutic value. It must be admitted that there are cases in which all these methods fail. This intractable form must be treated along the line previously mapped out for constipation of the disabled individual.

CATHARTICS IN "INTESTINAL TOXEMIA"

That cathartics must be of value to promote the elimination of disease-producing poisons from the intestine is self-evident. No one disputes this proposition. The dispute arises over the question: When does the intestine harbor such poisons? The intestinal tract is endowed with wonderful safeguards against intoxication, not the least among which is the inspissation of the intestinal contents and the formation of scybala from which absorption practically does not occur. Indeed, to whatever extent cathartics interfere with the formation of scybala they contribute to intestinal toxemia, not only because absorption from liquid or semiliquid contents is much more active than from solid material, but also because such contents form better culture mediums for bacteria, partly by reason of their fluidity and partly by reason of the fact that they are richer in nutritive material for bacteria. The doctrine of Adolf Schmidt,[22] "No diarrhea with increased peristalsis without secretion of a decomposable fluid by the intestinal membrane," applies to diarrhea produced with therapeutic intent as well as to diarrhea occurring from other causes. It is a well known clinical fact that intoxication phenomena are much more prominent in diarrhea than in constipation, and that there are people who feel weak and miserable, as though poisoned, for a few days after purgation. Of course, this increase in autointoxication may be merely temporary, to be followed by improvement, for, as Herschell and Abrahams[23] say, both castor oil and saline purgatives greatly increase autointoxication for some hours, the excretion of ethereal sulphates rising very considerably. It then commences to fall until it is reduced much below normal. The explanation is, of course, that the purgative stirs up the intestinal contents, and the poisons are absorbed into the circulation.

The theory that toxic intestinal contents are responsible for disease has been so abused as a "cloak for ignorance" that the terms "biliousness" and "autointoxication" are practically tabu in strict scientific discussion. "Biliousness," which once was considered a well established disease entity, the successful treatment of which, by the use of "chologogues," was one of the cherished dogmas of medicine, has become so unpopular of late that one searches in vain for even the word "biliousness" in the index of modern books on gastro-enterology or on the practice of medicine. Adami[24] concludes that the term "gastro-intestinal autointoxication" is pernicious, and not to be employed by any self-respecting member of the medical pro-

*This is the third of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

22. Schmidt, Adolf, quoted by Aaron, C. D.: Diseases of the Digestive Organs, Philadelphia, Lea & Febiger, 1918, p. 238.
23. Herschell, G., and Abrahams, A.: Chronic Colitis, New York, Longmans, Green Co., 1914.
24. Adami, J. G.: Chronic Intestinal Stasis, Brit. M. J. 1: 183 (Jan. 24) 1914.

fession, save for so limited a set of conditions that for ordinary purposes it may safely be expunged from the medical vocabulary. Still, it remains a clinical fact, abundantly substantiated, that a very large number of symptoms have been relieved by catharsis. With many a physician it is a rule of practice when in doubt to "open the bowels." Alvarez,[25] who rejects the doctrine of the chemical causation of these symptoms, admits that symptoms such as mental haziness or "dopiness," malaise, headache, spots before the eyes, coated tongue, and poor appetite, are often instantly relieved by a bowel movement. He explains these symptoms as due to the effect of afferent nerve impulses, coming from a distended overactive or wrongly acting bowel, on a particularly sensitive nervous system. According to him, also, ripples of reverse peristalsis carry more than the usual amount of bile back into the stomach and up into the mouth, depositing gastric and perhaps intestinal contents on the back of the tongue, and giving rise in this way to the coat on that organ—sometimes even bile-stained—the bad taste and the bad breath. He believes that the relief obtained by taking calomel is not due to any action on the liver, but to a restoration of the normal downward currents in the intestine. Be that as it may, we must conclude that cathartics do frequently relieve symptoms due to abnormal conditions within the bowel, and that they must therefore be looked on as an important diagnostic aid in our hands. Of course, the proper curative treatment of the symptoms due to chronic intestinal stasis is that of the accompanying constipation, and this requires differentiation of type and etiotropic treatment, rather than chronic catharsis.

CATHARTICS IN DIARRHEA

In the treatment of diarrhea, cathartics play, at most, a minor rôle. Of course, they might "assist nature" in certain cases, especially of stercoral diarrhea, that is, diarrhea due to retained fecal masses, and in the fermentative form. On the other hand, in gastrogenic and in nervous diarrhea they are useless and may be harmful. Before using cathartics in diarrhea we should, therefore, ask ourselves, first, whether the cause is located in the intestine; and, secondly, whether nature requires our assistance. Hill's[26] common sense statement regarding purgation in infantile diarrhea also has decided bearing on the treatment of diarrhea in the adult:

> It is a mistake to give a purge as a routine in every diarrheal disease. If there is any harmful material in the intestine which is not coming out as fast as it should, a purge ought to be given; otherwise not. It is not rational to purge a baby which is already having a good many loose stools a day, and whose intestine is emptying itself of toxic material as fast as it possibly can. In such cases, castor oil or calomel adds insult to injury. On the other hand, a baby who is seen at the onset, who has fever, and who has not yet been emptied by diarrhea, ought to be purged at once; and it is often striking to see how the temperature will drop and how much more comfortable the baby will be after a good cleaning-out.

CONCLUSIONS

1. With the average adult, a daily bowel movement is not a necessity for a state of health.

2. Cathartics are habit-producing drugs, admissible only in case of temporary disturbance due to harmful material in the intestine, and in those suffering from an intestine disabled by local or general disease or debility, who in default of curative measures may have to be provided with a habitual evacuant. Especially obnoxious is the habitual use of purgatives in childhood.

3. Mild laxatives and enemas should replace the more drastic drugs. The mildest is the best, and the patient should be carefully fitted with the cathartic he needs.

4. Acute abdominal pain, unless accompanied by diarrhea, contraindicates catharsis. On the other hand, some patients with a chronic tendency to abdominal pain may keep themselves comfortable by suitable catharsis.

5. Cathartics are useful as a means of diagnosis for the determination of the degree to which symptoms are due to disturbance within the intestine.

6. Routine purgation, be it preoperative, postoperative or postpartum, be it employed in the treatment of diarrhea, apoplexy, dropsy or uremia, is undesirable.

(To be continued)

25. Alvarez, W. C.: Origin of the So-Called Autointoxication Symptoms, J. A. M. A. **72**: 8 (Jan. 4) 1919.
26. Hill, L. W.: The Etiology and Treatment of the Diarrheal Diseases of Infancy, J. A. M. A. **72**: 1653 (June 7) 1919.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ALBUTANNIN.—Tannin Albuminate Exsiccated.—A compound of tannic acid and albumin, thoroughly exsiccated, and containing about 50 per cent. tannic acid in combination. It was first introduced as tannalbin.

Actions and Uses.—Albutannin is astringent. Its use is based on the assumption that the tannin compound would pass the stomach largely unchanged and thus the astringent action be exercised in the intestine where the compound would be decomposed by the intestinal fluid, slowly liberating the tannic acid. It is not likely to produce gastric disturbance. It is used in diarrhea, particularly in that of children, and in phthisis.

Dosage.—From 1 to 4 Gm. (15 to 60 grains) in powder or tablets followed by water. For infants the dose is from 0.3 to 0.5 Gm. (5 to 8 grains) in gruel or other mucilaginous liquids.

Albutannin is prepared by precipitating 10 parts of a 10 per cent. solution of egg albumin with 6.5 parts of a 10 per cent. solution of tannic acid, washing the precipitate with water until the washings react only faintly to ferric chloride, drying it on porous tiles, powdering and heating the product to about 125 C. for six hours.

Albutannin is a cream yellow or light brown, odorless, tasteless powder, containing about 50 per cent. of tannic acid. It is practically insoluble in water or alcohol, but slowly soluble in alkaline fluids, which decompose it into its constituents.

Shake 0.1 Gm. of albutannin for one-half minute with 10 Cc. of water and filter. To the filtrate add one drop of ferric chloride test solution. Only a slight blue coloration is produced (*free tannic acid*).

Incinerate 0.5 Gm. albutannin. Not more than 0.2 per cent. of ash remains.

Albutannin-Calco.—A nonproprietary brand complying with the standards for albutannin.

Manufactured by The Calco Chemical Company, New York. No U. S. patent or trademark.

Albutannin-Merck.—Merck and Company have adopted the name albutannin for the product accepted as tannin albuminate exsiccated-Merck (see JOURNAL A. M. A., March 1, 1919, p. 653).

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SATURDAY, NOVEMBER 1, 1919

SOME EFFECTS OF FOOD RESTRICTIONS IN EUROPE

In an elaborate review of the effect of war-time food conditions in Germany on the nutrition and health of her people, Professor Determann[1] concludes that the most significant consequences of the war diet are chargeable to its small fuel value. Emaciation, weakness and decreased resistance to present or acquired disease have increased mortality and morbidity in an amazing degree, especially among older persons and in large cities. In confirmation of the untoward effect of the lowered calory intake we now have the added testimony of Professor Loewy[2] of Berlin, who admits that the outcome of the enforced dietary conditions has demonstrated that the views accepted with respect to the metabolism of energy in peace time apply with equal truth during war.

What were the outstanding features of the rations supplied to the people of the Central Empires toward the end of the war period? They were low in protein. During prewar days the nitrogenous foods formed a liberal component in the German dietary, approaching the standards of 100 gm. and more a day that have been observed to exist in most civilized countries. At the end of three years of war, Loewy found that the poorer classes in Berlin were reduced to a protein consumption of less than half this figure, though in the rural districts better conditions prevailed despite the monotony of the country diet, in which bread and potatoes predominated. The diet was also poor in fats, which were largely replaced by carbohydrates. Whereas in peace time the latter constituted scarcely more than 60 per cent. of the calories of the ration, by April, 1916, they had increased to 68 per cent., on the average, and amounted to 70 per cent. or more in April, 1917. A diet of this composition is inevitably largely vegetable in origin, rich in cellulose, devoid of stimulating properties and, as further details show, in the present instance, limited in variety.

War edema, presumably associated with insufficient food and particularly with deficiency in the protein intake, has been widely observed. Hernias and displacements of internal organs have been a frequent consequence of emaciation. Lactation has been unsatisfactory among child-bearing women. Gastro-enteric disorders, rickets, deficiency diseases and delayed growth have affected the welfare of children. Tuberculosis has increased its ravages. Eclampsia is reported by Determann to have become less frequent in occurrence; diabetes and cancer also have not increased under the war-time restrictions. All in all, however, it is a sinister picture that each new report presents, for the truth is no longer camouflaged to mislead an enemy.

THE INFECTED WOUND

The result of the intensive study of war wounds has been a better insight into the biology of infected wounds, which, in turn, has led to improvements in methods of treatment. Although most of the really important factors were known before the war, the great emergency brought them into practical general knowledge in a way that would otherwise have been impossible. For the first twelve to twenty-four hours following injury, the so-called preinflammatory stage, infecting organisms are confined to the surface of the wound. If, during this period, the wound surface can be excised (débridement), healing by primary intention is the rule and chemical treatment is useless at this stage. The importance of this phase of treatment has recently been emphasized by Duval,[1] who has shown that wounds of joints, once considered the most vulnerable of all tissues to infecting organisms, may be safely closed without drainage after débridement.

When wounds are seen after the preinflammatory stage has passed and the bacteria have penetrated deeply into the tissues, there is no known short cut by which they may be eliminated. This factor, recently discussed by Flemming,[2] furnishes a fertile field for investigation. It appears to have been demonstrated that the two important natural agencies combating infection are the blood and tissue fluids and the leukocytes. The blood and tissue fluids exert their influence because of their alkalinity and their antitryptic power. The importance of the alkaline reaction of the fluids is well illustrated by the fact that Welch's bacillus grows a thousand times better in "acidosed" serum from a gas gangrene patient, that is, a serum which has lost nearly all its alkalinity, than it does in normal serum. The influence of the antitryptic power of the serum also may be readily demonstrated. In serum of normal or raised antitryptic power, streptococci alone grow freely when planted in small numbers; staphylo-

1. Determann, H.: Die Bedeutung der Kriegsernährung für Stoffwechsel und Gesundheit, Ztschr. f. physiol. u. diätet. Therap. **23**: 147 (April) 1919.
2. Loewy, A.: Statistische Erhebungen über die Kriegakost im dritten Kriegsjahre, Ztschr. f. physikal. u. diätet. Therap. **23**: 81 (March) 1919. Loewy, A., and Brahm, C.: Untersuchungen über Art und Wirkung der Kriegsernährung, ibid. **23**: 169 (May) 1919.

1. Duval: Treatment of War Wounds of Joints, Surg., Gynec. & Obst. **29**: 222 (Sept.) 1919.
2. Flemming, Alexander: The Action of Chemical and Physiological Antiseptics in a Septic Wound, Brit. J. Surg. **7**: 99 (July) 1919, Hunterian Lecture, Feb. 12, 1919.

cocci and some diphtheroids multiply to a lesser extent. Serum of reduced antitryptic power, however, furnishes a suitable culture medium for an abundant bacterial flora.

The ability of leukocytes to destroy bacteria has been repeatedly demonstrated, and they are probably the chief agents in the removal of bacteria from infected wounds. They appear to exert a twofold influence: They are strongly antibacterial; yet, when they emerge on the surface of a wound, they readily disintegrate, setting free a proteolytic enzyme which, in turn, neutralizes the antitryptic properties of the wound liquids, thus making them better culture mediums for bacteria. At first sight, this appears to be distinctly detrimental. As a matter of fact, the liberation of proteolytic enzymes in this manner is of salutary benefit; it is nature's method of performing débridement. It is largely through the activity of the leukocytic protease, derived probably from the neutrophil granules of the polymorphonuclears,[3] that necrotic tissue and blood clots are cast from the wound. With the separation of the sloughs, the wound is bathed in exudate of a degree of alkalinity and an antitryptic titer approaching that of normal serum. The serosaprophytes, therefore, rapidly disappear. The leukocytes, no longer caused to disintegrate *en masse*, cease to reduce materially the antitryptic property of the wound liquids, and exert their maximal antibacterial power, the wound becomes relatively aseptic, and healing progresses at the maximal rate. The influence of infection on the rate of healing has been graphically demonstrated by Carrel and Hartmann[4] and by Du Noüy.[5] These authors found that the curve representing the diminution in the size of an aseptic wound while it cicatrizes is regular and geometric; the intervention of an infection in such a wound greatly decreases the rate of healing and may stop healing entirely.

The third factor is the character of the walls of the wound. When they are overhanging and noncollapsible, as is the case frequently in compound fractures, and especially when the tract of exit is narrow and the wound cavity relatively large, infection persists and can be permanently eradicated only by operative obliteration of the cavity.[6] Of course, sequestrums require removal; but if sequestrotomy is not accompanied by wide removal of the unyielding wall of the cavity, so as to permit its being filled by the collapse of surrounding soft tissues, healing will be difficult.

The rôle of antiseptics in the treatment of wound infection is problematic. Flemming[2] believes that all solutions that are at all effective have no appreciable bactericidal titer in the wound, but that they act as mild tissue irritants leading to increased leukocytic emigration and to more abundant flooding of the wound with normal tissue fluids, in this way hastening the separation of sloughs and the elimination of bacteria. He regards the antiseptic method of Carrel, for instance, as fundamentally dependent on the same principles as that of the so-called physiologic method of Sir Almroth Wright. It is perhaps too early to consider the question settled, but the data and the arguments based thereon in support of this idea are exceedingly attractive.

3. Wells: Chemical Pathology, Ed. 3, 1918, p. 95.
4. Carrel, A., and Hartmann, A.: J. Exper. Med. **24**: 429 (Nov.) 1916.
5. Du Noüy, P. L.: J. Exper. Med. **24**: 461 (Nov.) 1916.
6. White: Chronic Traumatic Osteomyelitis, New York, 1919, p. 107.

INFECTIOUS ABORTION IN CATTLE

Since Bang's discovery of a characteristic microorganism associated with so-called "contagious abortion" in cattle, it has become customary to attribute the disease to *Bacillus abortus* described by him. The assumption that this is the sole or even the predominant etiologic agent concerned with a malady that occasions enormous economic losses has diverted attention away from the microbial cause and toward prevention or cure. Aside from the indirect interest that bovine disease represents in relation to human welfare, and particularly when the milk supply is involved, the bacillus of contagious abortion in cattle has lately been discussed as a possible agent of more direct menace in childhood.

The newer studies at the Department of Animal Pathology of the Rockefeller Institute for Medical Research, Princeton, N. J., under the leadership of Theobald Smith,[1] bring unexpected evidence that contagious abortion may involve something more than Bang's bacillus. They include the discovery of a spirillum of definite morphologic and cultural characteristics designated by Smith as *Vibrio fetus* and found associated in a considerable series of cases with what is commonly known as infectious abortion in cattle. He properly maintains that the isolation in pure culture of a definite morphologic entity, a vibrio, with practically the same biologic characters, from a series of cases of the same clinical complex establishes a presumption in favor of the specific identity of the organism and also in favor of the inference that such organisms are etiologically related to the diseased condition. It might be assumed that *Vibrio fetus* found in the fetal membranes is merely an invader from the more external genitalia or from the blood after the fetus has been damaged by other agencies. However, the fact that disease of the fetal membranes has been produced experimentally by injection of pure cultures of the vibrio strengthens the presumption that it may be a true cause of infectious abortion.

The new investigations indicate that many cases of abortion in cattle occur without evidence of the pres-

1. Smith, Theobald: J. Exper. Med. **28**: 701, 1918. Smith, Theobald, and Taylor, Marian S.: Ibid. **30**: 299 (Oct.) 1919. Smith, Theobald: Ibid. pp. 313, 325. Smillie, E. W.; Little, R. B., and Florence, Laura: Ibid. p. 341.

ence of Bang's bacillus. In general, *Bacillus abortus* is associated with first pregnancies, and its presence rapidly diminishes in frequency in later ones. Apparently an immunity to this bacillus may become developed in cattle, whereupon *Vibrio fetus*, and, perhaps to a far less degree, miscellaneous septic and pyogenic micro-organisms, may become the inciters of abortion in later pregnancies. If these conclusions become substantiated by further studies, it will become clear that abortions in cattle are attributable to a variety of infectious and noninfectious agencies. Even now it seems established, however, that the udders of a relatively high percentage of cows become infected with *Bacillus abortus*, probably during their first abortion disease. In this way the relation of this micro-organism to the milk and consequently to human health is worthy of consideration.

HOSPITALS FOR CONTAGIOUS DISEASES

The general attitude toward hospitals for contagious diseases seems to be undergoing a gradual evolution. We are getting away from the idea that such hospitals are "pest houses" and "necessary evils," whose chief function is to serve as a place of confinement for persons who might endanger the public. We are coming to look on them more as places where sick persons may secure needed care, which would not be possible in their homes, as is the case with noncontagious medical and surgical cases in a general hospital. Usually conditions that make impossible proper isolation at home also preclude suitable medical and nursing care there. Hospitals for contagious diseases are specially designed for those with very limited means and for those living in hotels, boarding and rooming houses. The value of hospitals as a means of eradicating contagious diseases through isolation has made a strong appeal to sanitarians everywhere. However, experience in England and in this country has led such authorities as Newsholme, Chapin and others to conclude that the hospitalization of persons with contagious diseases has failed to reduce their incidence materially. Chapin[1] says:

> Hospitals are useful for protecting the family, for checking outbreaks in institutions, for receiving cases from lodging houses and hotels, for furnishing better medical service, and for relieving the overworked housewife in the families of the poor. It is an unnecessary expense to provide hospital accommodations for all cases of scarlet fever and diphtheria, or for 90 per cent. or even 80 per cent. That half or two thirds of the cases of these diseases can, for all practical purposes, be equally well cared for at home, is not unlikely.

In a hospital for contagious diseases, an occasional instance of crossed infection will occur even though every human effort is made to avoid it. This will be always one reason for home isolation and treatment, whenever they can be carried out satisfactorily.

In view of these facts, the statement of Stokes[2] in his interesting discussion of the organization and methods of contagious disease services, that a hospital for contagious diseases is, like the police, a necessary evil whose principal justification is the convenience and safety of the well public, is only partly true. The ancient idea that a hospital for contagious diseases is a "pest house" and a source of danger to those living near it has largely influenced the location of such institutions in a community. Abundant experience has shown that the same considerations should determine a convenient and central location for a hospital for contagious diseases as for any hospital for acute illness. An intimate connection with a general hospital is economical from an administrative and operative standpoint, and except when the contagious disease hospital is very large, it may properly be located in one building of a general hospital group. Such a location enables the patients in emergencies and complications to benefit by the services of specialists, and has a tendency to raise the level of the character of the medical work in the hospital. In contrast to this, a hospital for contagious diseases that is situated in an isolated place, near the edge of a large city, operates under very serious disadvantages, both from an economic and a scientific standpoint. Hospitals for contagious diseases were formerly constructed on the same principles as general hospitals, and were often brought into disrepute by the frequency with which a patient entering with one disease contracted others in the institution.

Richardson[3] recently presented an able discussion of the construction of modern isolation hospitals. In efforts to combat mixed infections, the barrier and cubicle systems were introduced and are useful in old buildings with large rooms, but should not find a place in a building newly constructed at this time. The ideal hospital for contagious diseases consists of small rooms that accommodate single patients. This is insisted on by those who, like Richardson[3] and Wilson,[4] have had practical experience in hospitals for these diseases. The initial cost of providing toilet and bath tub for each room is more than offset by the advantage from the use of baths in treating patients and by the saving in work required of nurses and attendants. Each room should be supplied with a lavatory with mixed hot and cold water controlled by the foot. The liberal provision of windows and the introduction of glass into partitions prevents a building constructed in this manner from being unduly dark. With single rooms, cross infections can be practically eliminated, and diseases of various sorts can be cared for at the same time in varying proportion. All the space becomes available at all times. As with general hospitals, so those for contagious diseases should serve as training places for physicians and nurses. The medical graduate and the nurse are not fully prepared for the practice of their professions if they have had no practical experience in the treatment of contagious diseases. The con-

1. Chapin: Sources and Modes of Infection, 1910.
2. Stokes, J. H.: Pennsylvania M. J. **12**: 729 (Aug.) 1919.
3. Richardson, D. L.: Mod. Hosp. **13**: 108, 1919.
4. Wilson: Pub. Health Bull., 1918, No. 95.

tagious diseases furnish the medical student with as great a variety of medical experiences as do those of a general hospital. Without a careful training in contagious diseases, a nurse is not qualified for institutional or public health work and her field of activities is necessarily limited. Pupil nurses should receive this part of their training toward the end of their course, after they are familiar with aseptic technic. No pupil who is careless in her work should be allowed to continue. Before a person enters on this work, diseased tonsils should be removed; serious organic disease of any kind would naturally exclude any person from the work. By immunizing those who are susceptible to diphtheria, as determined by the Schick test, and by the use of gauze masks, rubber gloves and aseptic methods, the danger of contracting the diseases with which the nurses are associated is largely eliminated. To repeat: It is important that the profession and the laity should appreciate that the hospital for contagious diseases is not a nuisance but an institution of real service; that it furnishes innumerable problems for solution by the research worker, and that its clinical material should be utilized for the instruction of medical students and nurses so that patients suffering with contagious diseases among the people may receive prompt and efficient medical and nursing care, at the same time that effective measures may be instituted for protecting the well from infection.

Current Comment

THE STYLES IN SUICIDE AND HOMICIDE

Primitive man, when stirred by some primeval instinct to remove himself or some neighbor permanently from the community, adopted the means at hand. His body, or that of his neighbor, shortly after he had entered on the resolution, would be found at the foot of some cliff, from which it had fallen; or perhaps he would disappear into the depths of the sea, or, as with the Hawaiians, into the fuming crater of a volcano. With the coming of science, methods began to be refined. It is reported that the ancient Egyptians were skilled in securing the deadly prussic acid from the peach; Nicander (204 B. C.) described the use of snake venom, opium, henbane and other popular methods of seeking the Great Beyond. Socrates drank the hemlock, and Cleopatra succumbed to the sting of the asp. In more modern times arsenic became popular, reaching the height of refinement in the seventeenth century. At this period the infamous Tofana at Venice prepared vials of arsenous oxid for general sale, and herself concocted weird and unusual combinations for the secret use of arsenic by those high in political and ecclesiastical circles. Since the advent of firearms, these have steadily maintained a reasonable popularity as suicidal and homicidal agencies in view of their notorious ease of procurement and increasing facility of operation. The adoption of hanging—a rather awkward procedure requiring four ingredients, a victim, a noose, something to hang it from and something to step from—is rather common. And we must not forget asphyxia, which the statistics list separately from hanging. Here we have an increasing vogue, although the advent of electric light in place of gas makes the method not so generally available. Modern man, in place of leaping from a cliff, sometimes seeks the easily available upper floors of city skyscrapers and thence projects himself into eternity. However, poisoning has lost but slightly in popularity. In ancient days the fame of poisoner and poisons was spread by word of mouth. The newspapers establish the style in modern times. Every one remembers when phenol—popularly called carbolic acid—was the deadly elixir of choice. Domestically used to aid the unesthetic bedbug to shuffle off this mortal coil, it sometimes found its way to the family medicine chest and was available for human extermination. The demise and the method were duly recorded in the daily press, thus increasing the popularity. Latterly, since the advent of mercuric chlorid for certain domestic uses, this poison is conveniently at hand. Not only is it convenient but there exists for it an alluring propaganda. Thus, when a Georgia banker took mercuric chlorid by mistake and lay dying, the anxious reporters hung around the lethal chamber ready to report each new development in the struggle. Through the tremendous notoriety given to this case, mercuric chlorid was introduced as an available poison. It became one of the six best sellers. Pharmaceutical houses wrote "danger" on the bottle, put the tablets on strings, put warning attachments on the cork and tried other safeguards. And when the case of the Georgia banker faded from memory it seemed that these safeguards had had the desired effect. Now suddenly comes another intimate tragedy for yellow-journalistic fancy. Reams of paper are filled with the weeping of the hysterical journalistic sob sisters—sobsysterical writing, one might call it. And do the safeguards placed around the drug have any effect? Not a bit. The styles in suicides and homicides, as even styles in dress, are influenced by newspaper publicity.

THE CAUSE OF INFLUENZA AND ITS BEARING ON TREATMENT

The striking thing about the etiologic studies of influenza which were made last year was the lack of uniformity in the results obtained. Reports that filtered through from Germany indicated that Pfeiffer himself was unable to find constantly the bacillus which he first discovered in 1894 and which had been generally regarded as the cause of the disease. While some investigators still regarded as favorable the evidence that the bacillus of Pfeiffer was the etiologic factor, others were unable to find it constantly in any large percentage of patients. Most physicians who observed the characteristic clinical picture presented by the disease and reflected that the bacillus of Pfeiffer had been found every year since its discovery in uncharacteristic, upper air passage infections became skeptical as to its etiologic relationship to true epidemic influenza. Exten-

sive inoculations with preventive vaccines prepared from the Pfeiffer bacillus led to somewhat discordant results, but, on the whole, the results supported the view that the vaccination with this organism did not produce immunity to influenza. During 1918, Nicolle and Lebailly stated that they had discovered a filtrable virus in influenza cases, and later on, certain British observers confirmed this finding. The work of Bradford, Bashford and Wilson[1] is the most extensive and the most convincing that has appeared on this subject. These observers were able to obtain a filter-passing virus from patients with influenza; they were able to cultivate it outside the body, and succeeded in reproducing the disease in the lower animals and in continuing the transmission beyond the first generation. They thus complied with all the postulates of Koch. Attention is now again called to their work, because opportunities will be afforded this fall and winter for a careful test. The discovery and the propagation of the micro-organism causing a disease is not always the most difficult step in reaching satisfactory treatment, but it is essential, and is likely to be the turning point in the conquest of the disease.

THE NATIONAL HOME FOR LEPERS

In January, 1917, Congress passed a law providing for a national leprosarium, and made an initial appropriation of $250,000. The law provided that the leprosarium should be under the control and supervision of the United States Public Health Service. A commission was immediately appointed by the Service to select a site for the institution. After spending many months in investigating suggested sites in various parts of the country, it selected an island lying off the coast of Florida, in the Gulf of Mexico. From all accounts the location is ideal in every respect. Now Florida is tremendously excited over the fact that that state has been selected, although the actual site is on an island and therefore isolated from the mainland. According to the newspapers, the governor of the state is taking the lead in the opposition and, apparently, is fathering an active crusade against the project; he has even threatened to remove from office certain local officers who favor it. Headed by the governor, a delegation has been to Washington to protest against the selection. Of course, all this foolish opposition is based on the idea that the leprosarium will injure the state as a health and pleasure resort, disregarding, evidently, the fact that a leprosarium which has existed for some time in California has not eliminated that state as a pleasant and attractive place to live in. The old biblical horror of leprosy dies hard. While it is true that leprosy is mildly contagious, the disease is easily controlled by segregation. It is safe to assume that the commission did not select the location without due consideration, and it is hoped that the government will not be stampeded from its choice by a popular prejudice based on ignorance of the facts concerning the disease.

1. Bradford, Bashford and Wilson: Quart. J. Med. **12**: 259 (April) 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Poison Act Violation Charged.—Four additional charges of violation of the State Poison Act were said to have been placed against Dr. Paul R. Lanz, Oakland, October 1, by operatives of the Pharmacy Board. The complainants alleged that Dr. Lanz forged their names to prescriptions used by him to obtain narcotics from the local drug stores. Dr. Lanz was released under bonds of $6,000.

Personal.—Jean J. A. Van Kaathoven, Major, M. C., U. S. Army, who commanded Base Hospital No. 35, Los Angeles, has been cited by General Pershing for "exceptional meritorious and conspicuous service, overseas."—Dr. Etta G. Gray, Los Angeles, president of the Medical Women's National Association, has been sent to Serbia and the Near East to investigate conditions and arrange for the establishment of hospitals where needed——Dr. Paul E. Bowers, Whittier, has been appointed superintendent of the Northern Indiana Hospital for the Insane, Logansport.

CONNECTICUT

Intensive Mental Hygiene Campaign.—The Connecticut Mental Hygiene Society, the first organization of its kind in the world, is conducting an intensive campaign for the amelioration of mental health. The staff has been completely reorganized and Dr. William B. Terhune, New Haven, has been placed in charge as medical director. He is assisted by several social workers with psychiatric training, and clinics are being conducted in New Haven, Waterbury and Hartford. The work is rapidly being extended and other clinics will be opened in the near future.

Society Meetings.—The twelfth semiannual meeting of the Connecticut State Medical Society was held in connection with the semiannual meeting of the Tolland County Medical Society at the State Training School and Hospital, Mansfield Depot. The chief addresses were on "The Care of the Feebleminded," by Dr. Charles TenEyck LaMoure, superintendent of the Training School, and "Some Remarks on the Diagnosis of Mental Defects" by Dr. Arnold Lucius Gesell of Yale University.——The welcome-home reception to the medical men of Middlesex County who served their country during the great war was held by the Middlesex and Central County Medical Association, in Middletown, October 9. Seventeen members of these associations were in the military service.

ILLINOIS

Hospital Name Changed.—The German-American Hospital, Chicago, changed its name, October 20, to the Diversey Parkway Hospital.

Personal.—Dr. Thomas J. O'Malley, Chicago, after an extended service as major, M. C., U. S. Army, at Camp Merrit, N. J., has been discharged from the military service.

Institute of Medicine Meeting.—At the meeting of the Institute of Medicine of Chicago, October 30, the program was devoted to the presentation of the results of new research by some of the younger research workers of Chicago.

Illegal Practitioner Fined.—Miss Agnes Sewczyk of 4542 South Laflin Street, Chicago, was arrested by the Illinois Department of Registration and Education for practicing midwifery without a license and was fined $25 and costs.

Harrison Act Violators.—Victor Modine was held for October 11, by Judge Carpenter, Chicago, under bond of $5,000 on charges of violating the Harrison Narcotic Act. Modine was arrested in 1917, and while released under bond of $3,000 fled to Canada. He was recently expelled from Canada and arrested when he crossed into the United States. ——Louis Deryer, alias James B. King, was arrested, October 25, on the charge of selling opium, and was released under a cash bond of $10,000.

Venereal Disease Peril.—Drs. Harold N. Moyer, Hugh T. Patrick, Harry A. Kraus, Gustav Kolischer, James Whitney Hall, John Leeming, William O. Krohn and G. Frank Lydston appeared before Judge Joseph P. David in the superior court to testify in a habeas corpus suit brought to obtain the

release of two girls arrested by members of the morals squad and held in the Lawndale Hospital. All of these physicians agreed that venereal diseases should be subject to the same regulations as other contagious diseases.

KANSAS

Health Car.—The health car Warren, belonging to the Kansas State Board of Health, has been taken from Topeka to Manhattan, and thence will go to Clay Center, Clyde, Cuba and other towns. Dr. Caroline A. Carr is in charge.

Medical Society Organized.—At a meeting held in Garden City, September 19, the Finney County Medical Society was organized and a charter was applied for. The following officers were elected: president, Dr. William J. Stilson; vice president, Dr. Charles Rewerts; secretary, Dr. Ronald M. Troup, and treasurer, Dr. Theodore F. Blanke, all of Garden City.

Drive to Secure Medical School.—Business men of Rosedale, headed by Dr. Clifford C. Nesselrode, Leneza, have inaugurated a campaign to raise $32,000 to buy suitable land for administration building, laboratories and lecture halls for the medical department of the University of Kansas, in order to guarantee the retention and continue the use of the gift of Dr. Bell.

MARYLAND

Personal.—Dr. J. Fred Hempel, Baltimore, in charge of the Pasteur department of the state board of health, has been appointed assistant commissioner of health, to succeed Dr. William T. Howard, who will go to the Johns Hopkins School of Hygiene as an instructor. Dr. Hempel assumes his new duties, November 1.——Dr. William G. MacCallum, Baltimore, professor of pathology in Johns Hopkins Hospital, has returned after several months spent in Peru, Panama and the West Indies in the study of malaria and other tropical diseases.

Campaign for Healthier Schoolchildren.—Under the direction of Dr. E. V. McCollum of the Johns Hopkins School of Hygiene and Public Health, a campaign for healthier schoolchildren has begun in Baltimore. Three women skilled in child betterment work in the public schools of other cities began the work of weighing and measuring 10,000 children in seven Baltimore public schools. The effect on them of a special program of eating, sleeping and care of the body will be noted and they and their personal records of gain in weight and general health will be pointed to as evidences of what science can do for a whole community. It will also demonstrate the value of the School of Hygiene and Public Health, of which Dr. William H. Welch, Baltimore, is president. The results will then be published for the benefit of the rest of the 80,000 schoolchildren of the city. The actual business of improving the condition of the children will not begin for a month as it will take at least that long to weigh and measure the entire 10,000 and record the figures on individual charts. It is planned to continue this work for one year, and Dr. McCollum hopes to demonstrate the supervision of the instruction of all schoolchildren in food values just as they are taught to read and write will be of advantage to the city.

MASSACHUSETTS

Ether Day.—The seventy-third annual exercises of Ether Day were held at the Massachusetts General Hospital, October 16, the address being delivered by Dr. Richard C. Cabot, Boston.

Personal.—Dr. Robert Bayley Osgood, Boston, has been appointed instructor in surgery for three years; Edward Allen Boyden, Ph.D., assistant professor of comparative anatomy for five years, and Dr. William Lorenzo Moss, Baltimore, assistant professor of preventive medicine for one year, in Harvard University.

New Officers.—Holyoke Medical Association held its first meeting since the war, October 8, and elected Dr. Irvin H. Farr, Holyoke, president; Dr. Robert E. Cleary, Holyoke, vice president, and Dr. Frederick A. Mead, Willimansett, secretary-treasurer.——At the annual meeting of the Northern Berkshire Medical Association, Dr. George L. Curran, North Adams, was elected president, and Dr. George H. Thompson, North Adams, secretary.

MISSOURI

Typhoid Epidemic.—It is asserted that an epidemic of typhoid in Concordia, Sweet Springs and other towns in that vicinity resulted from the use of ice taken from ponds contaminated by neighboring cesspools.

New Association Organ.—The Missouri Tuberculosis Association announces the appointment of Mrs. Emily Newell Blair as director of the newspaper publicity service of the association and editor of a monthly magazine to be called "Fairplay" which the association purposes establishing early next year.

Medical Library Donated.—Dr. Herbert S. Hill, Springfield, has presented his medical library to the Greene County Medical Society. This is the second donation of medical works received by the Greene County Medical Society, the late Dr. H. L. Porter of Seneca, having directed that his medical library be given to that society.

Personal.—Dr. Cardinal B. Woolsey, Braymer, is completing a new building for the Woolsey Hospital.——Dr. Ralph H. Major of Kansas City, professor of pathology and bacteriology in the University of Kansas School of Medicine, has accepted a position on the staff of the Henry Ford Hospital at Detroit.——Dr. M. C. McMurry, Paris, was operated on for appendicitis in the Woodland Hospital, Moberly, recently. He is now convalescent.

Venereal Disease Division Established.—A division of venereal diseases has been established by the state board of health and placed under the direction of Dr. Richard L. Russell, Humansville, who has had much experience in this work. He will shortly begin a campaign against venereal diseases and will visit many communities throughout the state to organize clinics and direct effectual measures to combat the venereal disease menace.

Medical Legion Post Organized.—Walter Reed Post No. 136, of the American Legion, composed largely of members of the medical and dental professions, was organized at St. Louis, October 3. The officers are: Drs. Fred W. Bailey, St. Louis, post commander; William T. Coughlin, St. Louis, vice post commander; John F. Hardesty, adjutant, and Clyde P. Dyer, finance officer. Drs. Major G. Seelig, St. Louis, and J. P. Harper were elected delegates to the state convention.

Major Gilles in St. Louis.—Major H. D. Gilles of the British Medical Corps was the guest of the Association of Surgeons of St. Louis and the St. Louis Dental Society, October 17, and spoke of the work done in plastic surgery in treating wounds of the face during the great war. The lecture was illustrated with lantern slides showing the operations and methods of treating the injuries. Major Gilles was in charge of one of the largest reconstruction hospitals in the British army during the war.

Postgraduate Meeting.—The postgraduate meetings inaugurated by the council of the Missouri State Medical Association this season have proved very satisfactory. The meeting at Springfield was held in conjunction with the Southwestern Missouri Medical Association, and that at Cape Girardeau with the Southeastern Missouri Medical Association. Meetings were also held at Excelsior Springs and at Moberly. The attendance has been very encouraging and the programs have roused great enthusiasm for this method of exchange of thought. Each meeting represented a councilor district comprising from three to ten counties, invitations being extended to surrounding counties in other districts, and was held under the immediate direction of the councilor for the district.

Mental Hygiene Survey.—The survey of the state to ascertain the status of the insane and feebleminded has begun. At the request of Governor Gardner, sponsored by the Missouri State Medical Association, the Missouri State Mental Hygiene Association and other bodies, the National Committee for Mental Hygiene has secured the services of Dr. Samuel W. Hamilton of New York to make the survey, and he has arrived to begin the work. His headquarters will be located in the state house at Jefferson City. He will investigate every phase of the question and make the information gained accessible to the governor so that the policies of the state toward the care of the insane and feebleminded may be based on ascertained fact. It is estimated that about a year will be consumed in making the survey.

NEBRASKA

Northwestern Physicians Meet.—The Northwestern Nebraska Medical Society met at Valentine, September 25, for the first time in two years, and reorganized, electing the following officers: president, Dr. Robert H. Foster, Norfolk; vice president, Dr. Alfred G. Rasck, Valentine, and secretary-treasurer, Dr. William B. Ely, Ainsworth. The next meeting will be held at Norfolk.

Personal.—Dr. Ira H. Dillon, Auburn, has been appointed chief of the bureau of health by the secretary of the department of public welfare of Nebraska, succeeding Dr. William F. Wild, Lincoln, resigned.——Dr. James D. Case, superintendent of the Lincoln State Hospital for the Insane, has resigned and has been succeeded by Dr. David G. Griffiths, at present superintendent of the Institute for Feeble-Minded Youths, at Beatrice. Dr. H. B. Stewart, Hastings, has been appointed to succeed Dr. Griffiths.

NEW YORK

Personal.—Dr. Henry L. K. Shaw, Albany, formerly director of the division of child hygiene, has been appointed a consultant of the New York State Department of Health.——Dr. Matthias Nicoll, Jr., New York City, has been appointed a member of the advisory committee of the International Exposition of Municipal Equipment, recently established at Grand Central Palace, New York City.

Health Scoring Among Cities Resumed.—Last year the health department prepared a score card for the health activities of the various cities of the state. Dr. Charles C. Duryee, Schenectady, state sanitary supervisor, was detailed to interview health officers and mayors of cities for the purpose of scoring this work. The results are most gratifying. Great interest has been aroused and many improvements have been instituted. The score card has been improved and it is proposed to make a second round of interviews with mayors and health officers.

Mobile Child Welfare Station.—In order to stimulate interest in child welfare and other health work the Westchester County Chapter of the American Red Cross has equipped a model welfare station in the interior of an auto truck and has sent this exhibit to a large number of towns in Westchester County. When it arrives in a community it is placed under the direction of the local public health nurse, the state and county health nurses attached to the exhibit acting as her assistants. In this way great interest is stimulated in the various localities. Meetings are held in the evenings at which health films are shown and at which the health officer in the community is the speaker. Little Mothers' leagues have been organized in nearly every town visted.

Sanitary Supervisors' Conferences Resumed.—The conferences of sanitary supervisors and health officers in the various districts of the state, which it was impossible to continue during the past two years on account of the war activities, have been resumed this fall. During September and October the fifteen sanitary supervisors held in their districts one or more conferences with their health officers. One of the aims of the conferences has been to urge the 750 municipalities which have adopted the uniform sanitary code to adopt certain amendments which will bring the code up to date. Another measure presented at these conferences was the uses that could be made of the public health nurse in rural districts.

Pneumonia a Reportable Disease.—Dr. Hermann M. Biggs, commissioner of health, has sent an open letter to the physicians of this state reminding them that the Sanitary Code requires that all cases of pneumonia shall be reported to the local health authorities as soon as diagnosis can be made. In the reports, lobar and bronchial pneumonia should be differentiated. The letter calls attention to the fact that recent reports of deaths indicate that many deaths are recorded where no cases have been reported. The state department of health, while it does not expect a recurrence of respiratory diseases such as was experienced last year, believes many cases of pneumonia will occur and asks the cooperation of physicians in reporting cases so that the department and local health authorities will be in a position to take prompt action.

New York City

Personal.—Dr. Simon Flexner was the principal speaker at the first fall meeting of the New York Association of Biology Teachers held, October 24.——Dr. Jose Castillo, Jr., Sao Paulo, Brazil, is visiting New York for the purpose of studying hospital organizations.——Harry H. Warfield, Capt., Sanitary Corps, U. S. Army, and until recently attached to the base hospital at Camp Meade, Md., has been appointed superintendent of the Peck Memorial Hospital, Brooklyn.

Red Cross to Keep Base Hospitals.—The Metropolitan Committee of the Red Cross Roll Call announces in connection with the third Red Cross Roll Call which begins on November 2, that it will keep the eight base hospitals which it organized in this city during the war. It is pointed out it can only be prepared to meet the great disasters of peace such as floods, earthquakes, epidemics, etc., by a fully organized and equipped series of base hospitals. Eight New York City base hospitals were organized at the following institutions, most of which have given assurance that they will be kept intact for emergency: Bellevue, Presbyterian, Mount Sinai, New York Post Graduate, Roosevelt, Lenox Hill and the Metropolitan.

Hospitals Seek Million Dollar Fund.—The United Hospital Fund announces that during the week of November 17 an intensive campaign will be conducted from the new headquarters of the fund, at 261 Madison Avenue, to raise $1,000,000 to help meet the deficit of the forty-six hospitals that participate in the fund. The money will be divided among the hospitals on the basis of the free work carried on in these institutions. The money is to be apportioned by a committee headed by the mayor and composed of the presidents of the chamber of commerce and the Merchant's Association, Otto T. Bannard, Cornelius N. Bliss, Jr., Arthur Curtiss James and James Speyer. A recent report of the United Hospital Fund shows that the hospital facilities of New York are such that only one person in ten seriously ill in this city is getting hospital care. The report also reveals the fact that 2,000,000 New Yorkers, half of them with serious ailments, needed hospital treatment last year which they were unable to obtain on account of the underequipment of the city.

NORTH CAROLINA

Hospital Notes.—Dr. Robert T. Ferguson, Gaffney, announces that he is to build a private hospital in that city to be known as Dr. Ferguson's Private Sanatorium.——A modern hospital to be known as the Wilmington Hospital will be built in Wilmington by Drs. J. T. Haggard and John F. Miller. The building will have fifty rooms, each with a private bath, and will be fireproof.

State Bureau of Infant and Maternal Hygiene.—The state board of health will establish in a short time, with the cooperation of the American Red Cross, a bureau of infant and maternal hygiene, the expense of which will be born jointly by the state and the American Red Cross. This bureau will be an enlargement of the department recently conducted by the board under the direction of Mrs. Kate Brew Vaughan. The personnel will consist of a state director of nursing, and two assistant supervising nurses with the necessary clerical help.

Personal.—Dr. Benjamin K. Hays, Oxford, formerly secretary of the State Board of Medical Examiners and for the last four years secretary of the state medical society, has accepted service with the National Association for the Prevention of Tuberculosis and will engage in field work designed to instruct the discharged soldiers now in civil life outside of institutions, how to best conduct their fight against the disease.——Drs. L. C. Todd and Hamilton W. McKay have been appointed members of the staff of the Crowell Urological Clinic, Charlotte.——Dr. Edward Jenner Wood, Wilmington, has sailed for England, where he will study for a degree in tropical medicine.——Dr. S. Westray Battle, Asheville, entertained the members of the Buncombe County Medical Society at a dinner, October 20.——Dr. Kemp P. Neal, Monroe, has returned from service abroad and has located at Raleigh.——Dr. Benjamin E. Washburn, Raleigh, who has been for three years supervisor of rural sanitation in North Carolina, will leave the state, January 1, to take up his new duties in Jamaica under the International Health Commission.

OHIO

Professor Dreyer in Cleveland.—Prof. Georges Dreyer, professor of pathology in Oxford University, delivered a lecture at the medical library, Cleveland, October 27, under the H. M. Hanna lecture fund of the Western Reserve University School of Medicine.

New Regulations for Sanatorium.—Under a law which has just gone into effect, the board of governors of the Mount Vernon State Sanatorium are privileged to accept anywhere from $5 to $25 per patient for board, room and medical services. Under the old law, $5 was the only weekly fee that could be accepted. The per capita cost at the present time is $14.10 a week.

Trachoma in Scioto County.—An antitrachoma campaign, conducted by the state board of health, has been completed in Scioto County. During this campaign, 10,577 schoolchildren were examined, about evenly divided between the schools in the city of Portsmouth and those in rural districts.

Of these, 179 were said to have been suffering from trachoma. About five sixths of these cases were found in the rural schools.

Personal.—Dr. Clarence W. Russell, Springfield, is reported to be seriously ill with heart disease at the home of his sister in Burton.——Dr. Lloyd D. Trowbridge, Piqua, slipped and fell, October 1, fracturing his left leg at the ankle.——Dr. Emmett L. Hooper has been appointed first assistant physician, Dr. Freeman A. Osborn, second assistant physician, and Dr. Andrew F. Holmes, third assistant physician of the Athene State Hospital.

Hospital Notes.—The trustees of the Masonic Home, Springfield, have accepted plans for a new $500,000 hospital with a capacity of 175 patients. An auditorium with a capacity of 150 wheel chairs will be a feature.——The Hinde-Ball Mercy Hospital, Mount Vernon, was opened to the public, September 15.——Lancaster Muncipal Hospital opened a training school for nurses, October 1.——The Toledo Newsboys' Association has rented a private room at the Toledo Hospital for the use of any member of the association who is sick or hurt.

Grading for Health Work.—The grading of 102 health districts of the state for the purpose of fixing the salary to be paid to the district health commissioner has been established by the state civil service comission in compliance with the Hughes act, which revises the local health administrative organization. Salaries will increase automatically after specified periods of efficient service. Applications for non-assembled, competitive examinations for health commissioners of the general districts will be received until noon, November 15. Of all municipal districts, Cleveland is the only city in Grade 1, and the health commissioner will receive a salary of $6,000. There are four Grade 2 districts in which a salary of $5,000 will be given. In Grades 3, 4 and 5 the salaries are respectively, $4,000, $3,000 and $2,000 a year.

Smallpox.—The state department of health in a current circular states that smallpox is more prevalent in Ohio than in disease-ridden Serbia. Through medical aid from other countries, Serbia is now free from smallpox for the first time in five years; Ohio reports 119 cases in September. From January 1 to October 1, 3,292 cases were reported, and others have been added this month. "Ohio is in need of methods similar to those pursued in Serbia" said the department's statement. "Smallpox is one of the most easily preventable diseases. Our records show that a case in a person who has recently been successfully vaccinated is exceedingly rare. Any community which desires to rid itself of smallpox, as war-ravaged Serbia has done, can accomplish this result in a month by general vaccination of the population."

PENNSYLVANIA

Typhoid Fever.—There have been reported on the Fourth Street Extension, West Newton, nineteen cases of typhoid fever, said to have been contracted from the use of water from an old well.

Authorities on Insane Meet.—The association of trustees and medical superintendents of state incorporated hospitals for the insane and feebleminded of Pennsylvania met in Pittsburgh, October 17. The following officers were elected: Dr. Clyde R. McKinniss, Bridgeville, president; Dr. Ralph L. Hill, superintendent of the Allegheny County Hospital, vice president, and Dr. Q. N. Copp, physician-in-chief and administrator of the Pennsylvania Hospital Department for Mental Diseases, Philadelphia, secretary.

Personal.—Dr. Charles W. Sheldon, Tioga, has been appointed district medical director with supervision over the counties of Tioga, Potter, Bradford, Lycoming and Sullivan.——Dr. J. Bruce McCreary, Shippensburg, has been appointed supervising medical director for Perry, Franklin, Adams and Cumberland counties. Dr. McCreary has also been appointed medical director of the Mont Alto Sanatorium, succeeding Dr. Frederick C. Johnson, who has been granted leave of absence.——Dr. Raleigh R. Huggins, Pittsburgh, has been appointed dean of the faculty of the School of Medicine of the University of Pittsburgh, succeeding Dr. Thomas S. Arbuthnot, resigned.——Dr. George Burton Stull has been appointed surgeon to the Harrisburg Hospital and medical director of the Harrisburg public schools.——Dr. Samuel P. Longstreet, Scranton, who has been seriously ill with pneumonia, is reported to be convalescent.——Dr. John A. Hawkins, Pittsburgh, Lieut.-Col., M. C., U. S. Army, after twenty-six months in the army, of which thirteen months were spent in France, has returned home.——Drs. Calvin L. Johnstonbaugh, Bethlehem, and Irvine D. Metzger, Pittsburgh, have been reappointed by Governor Sproul, as members of the bureau of medical education and licensure.——Dr. William L. Estes, South Bethlehem, has been appointed chief of the genito-urinary dispensary of South Bethlehem.

Philadelphia

Plant Memorial Trees.—Six red oak trees were planted, Saturday, October 24, at the Pennsylvania Hospital in memory of members of Base Hospital No. 10, who gave their lives in France.

Medical Club Reception.—The Medical Club of Philadelphia gave a reception in honor of Hon. William C. Sproul, governor of the state of Pennsylvania, October 17, at the Bellevue-Stratford Hotel.

Medical Society Gives Dinner.—A testimonial dinner to Dr. Henry D. Jump, president-elect of the Medical Society of the State of Pennsylvania, was given by the West Philadelphia Medical Association at the Hotel Rittenhouse, October 28.

Sugar for Druggists.—The shortage of sugar has been seriously affecting the compounding of medical prescriptions in which sugar is used, so that Dr. Wilmer Krusen, medical director of Public Health and Charities, has issued an appeal to dealers and wholesalers in sugar to permit for medical purposes a 100 per cent. allowance to druggists.

Dispensaries Reopened.—After being closed for more than a year, the Medico-Chi dispensaries have been reopened to the public in conjunction with the state dispensaries. Cooperating with the state dispensaries through Dr. Edward Martin, head of the state department of health, and Dr. Alexander C. Abbott of the hygiene department at the University of Pennsylvania, the Medico-Chi clinics have been improved with new and up-to-date equipment.

Personal.—Dr. Edwin S. Cooke has been appointed first assistant of the State Genito-Urinary Dispensary.——Dr. Samuel T. Orton has been secured as head of the new psychopathic hospital at Iowa City, which is being erected at a cost of $150,000.——Dr. Charles J. Hatfield has been reelected chairman of the Southeastern Chapter of the American Red Cross.——Dr. William Harvey Perkins sailed for Chieng-Moi, Siam, October 30, to do medical missionary work in the Presbyterian Hospital there. During the war Dr. Perkins was a lieutenant in the medical corps, stationed at Base Hospital No. 20, France.

Occupational Therapy School Opens.—The opening session of the School of Occupational Therapy was held in its new quarters, 2131 Spruce Street, October 19. This is the only institution of its kind in the state for the training of aides in the new profession of "healing by occupation." There are courses in weaving, stenciling, block printing, modeling, bookbinding, woodcarving, toy making and basketry. Through the cooperation of the Philadelphia General Hospital and the Pennsylvania Hospital the students are insured good hospital training under skilled supervision, and further prepared for their work by a course of lectures by eminent physicians, surgeons and psychologists.

SOUTH CAROLINA

New County Officers.—At the annual meeting of the Lexington County Medical Society, held in Lexington, October 6, Dr. John H. Mathias was elected president, Dr. Daniel R. Kneece, Pelion, vice president, and Dr. James J. Wingard secretary (reelected).

New Training School.—At the opening exercises of the present session of the Medical College of South Carolina, the addition of another school was announced to be designated as the Training School of Nurses of the Medical College of South Carolina. This is an entirely new feature and is expected to attract many students.

Scholarship Awarded.—The governor has announced the award of scholarships in the Medical College of South Carolina, Charleston, to the following appointees: Ashley B. Haight, Charleston; John D. Bunch, Clarks Hill; Arthur Kennerly, Greenwood; M. C. Patton, Fountain Inn; W. M. Jones, York; John McIver Wilcox, Darlington, and James Furman Herbert, Columbia.

Hospital Notes.—It is understood that a new hospital to be known as the Orangeburg Hospital will be opened by Dr. Charles A. Mobley, formerly assistant to the surgeon at the Fennell Infirmary, Rock Hill.——The Mullins Hospital has been incorporated with a capital stock of $50,000 by Drs. French A. Smith, Frank L. Martin, Johnson H. Smith and Lonnie M. McMillan, all of Mullins.

Personal.—Dr. Robert H. Crawford, Rock Hill, has been awarded by the King of Greece the Medal of Military Merit for distinguished services with the American Red Cross in combating an epidemic of typhus fever.——Dr. Henry B. Malone, Chester, has been appointed chief of the internal medicine department of the Pryor Hospital.——Dr. Frank D. Mower, Newberry, has been commissioned lieutenant-colonel on the staff of Governor Cooper.

Venereal Disease Prevention.—A venereal clinic has been established in Columbia under the care of Dr. Charles V. Akin. It will take over the work previously done at the Columbia Hospital. The clinic will be located on the second floor of the old police station.——During the fiscal year of 1919-1920, the state board of health will expend $32,953.42 in combating venereal disease in South Carolina. One half of this sum has been appropriated by the general assembly and the other half by the federal government. Of this amount, $28,600 is to be devoted to the treatment of cases, $1,926 for administration, $1,200 for repressive measures, and $1,227.42 for education and publicity.

CANADA

Federal Health Department Created.—A bill recently has been passed by the Canadian House of Commons creating a federal department of health and providing for a minister of health and advisory committee. The authority of the department will extend to all matters affecting health within the jurisdiction of the Dominion of Canada.

Personal.—Dr. Robert R. McClenahan, Hamilton, Ont., district officer of health from Toronto to Niagara Falls, has been appointed medical officer to take charge of the venereal diseases campaign in Ontario with headquarters in Toronto, under the provincial board of health.——Dr. Wilfrid T. Grenfel, C. M. G., the Labrador medical missionary, has recently been in Toronto.

Hospital News.—The method of caring for the insane in the province of Manitoba is now undergoing a radical change. Persons suspected of being mentally unsound will be admitted to psychopathic wards of general hospitals to receive immediate expert treatment. Subsequently, these patients, if found suitable, will be sent to either the hospital for the insane at Selkirk or to Brandon. Specially trained nurses and interns will be provided and reports of each case will be forwarded to the superintendent of hospitals in Winnipeg.

Canadian Medical Association.—By a new arrangement the *Journal of the Canadian Medical Association* loses the services of Sir Andrew Macphail as editor, and substitutes an editorial board. Dr. Alexander D. Blackader, Montreal, is the chairman of this board; Dr. William W. Francis, assistant editor, and Dr. Maude E. S. Abbott, acting editor. Besides, there is a subeditorial board appointed by provincial associations. The former publisher has been bought out, but the journal will still be issued from Toronto.

Some Drug Importations Into Canada.—In 1915 Canada imported 80 ounces of cocain. This advanced from year to year until in the official year 1919, there were imported 12,333 ounces at a cost of $142,123. The morphin importations in 1915 amounted to 259 ounces; in 1919, 30,087 ounces at a cost of $179,195. Crude opium imported amounted to 7,248 pounds in 1915; in 1919, 34,263 pounds, at a cost of $534,555. Every province the last three or four years has enacted prohibitory liquor legislation; and a year or two ago manufacture and importation of alcoholic liquors was prohibited. A bill has recently been introduced into the Canadian House of Commons controlling drug importations.

GENERAL

Western Surgical Association Change of Meeting Date.—The time for the next meeting of the Western Surgical Association which will be held at Kansas City, Mo., has been changed to December 5 and 6.

Southern Medical Association Meeting.—The annual meeting of the Southern Medical Association will be held in Asheville, N. C., November 10 to 13, under the presidency of Dr. Lewellys F. Barker, Baltimore.

Honorary Fellowship for Surgeon-General.—It is announced that the Royal College of Surgeons of Edinburgh has conferred a honorary fellowship on Major-Gen. Merritte W. Ireland, Surgeon-General of the Army.

Women Physicians Pass Resolutions Favoring Prenuptial Physical Examinations.—The International Conference of Women Physicians in session in New York, at its meeting, October 24, passed resolutions advocating that couples contemplating matrimony present themselves for physical examination before wedlock. A resolution asking the conference to denounce tobacco smoking as an evil was voted down.

Appropriations for Maternal and Infant Care.—Senator Morris Sheppard of Texas has introduced a bill in the United States Senate carrying large appropriations for the public protection of maternity and infancy, and authorizing the Children's Bureau of the Department of Labor to cooperate with the various state health agencies in the promotion of maternity and infancy care. Several similar bills are pending in the Senate and House, but no action has been taken.

No Action on Public Health Legislation in Senate.—Efforts to get action on public health legislation in the United States Senate during the past week were unsuccessful. The Senate called up a measure to create a department of tuberculosis in the United States Public Health Service, a bill to appropriate $1,000,000 for the prevention and study of influenza, and a bill to appropriate funds for caring for drug addicts. By failure to obtain unanimous consent, the measures were passed by for consideration later.

Eye, Ear and Throat Men Elect Officers.—At the twenty-fourth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, held recently in Cleveland, the following officers were elected: president, Dr. Lee M. Francis, Buffalo; vice president, Dr. Hal Foster, Kansas City, Mo.; secretary, Dr. Luther C. Peter, Philadelphia; treasurer, Dr. Secord H. Large, Cleveland, and chief of directors, Dr. Clarence Loeb, Chicago. The twenty-fifth annual meeting will be held Oct. 14-16, 1920, at Kansas City, Mo.

Amendments Offered for Control of Venereal Disease.—An effort to add amendments to House Bill 5123 to prevent transmission through the mails of advertisements relating to the treatment of venereal diseases and certain sexual disorders is to be made in the House of Representatives. The amendments would extend the prohibitory mailing features of the measure to other diseases such as kidney diseases, bladder trouble, skin and blood diseases. The measure was introduced by Congressman Halvor Steernerson of Minnesota.

New Mississippi Valley Officers.—At the annual meeting of the Mississippi Valley Medical Association, held in Louisville, October 21 to 23, Chicago was selected as the place of meeting for 1920, and the following officers were elected: president, Dr. Frank B. Wynn, Indianapolis; vice presidents, Drs. Chauncey W. Dowden, Louisville, and Frank Smithies, Chicago; secretary, Dr. Henry Enos Tuley, Louisville (reelected), and treasurer, Dr. Samuel C. Stanton, Chicago (reelected).

Bequests and Donations.—The following bequests and donations have recently been announced:

City Hospital, Winston-Salem, N. C., $240,000 for improvements in the hospital, including a five-story fireproof building, by the will of R. J. Reynolds, Winston-Salem.

Columbia, Pa., Hospital, $1,000, by the will of Benjamin F. Hiestand, Marietta, Pa.

Methodist Home for the Aged and Infirm, Bala, Pa., $3,000 and a residence; Methodist Orphanage, Philadelphia, $3,000, and Methodist Hospital, Philadelphia, $500, by the will of Elizabeeth E. Kilburn.

Christ Church Hospital, Philadelphia, $30,000, by the will of Mary Wright.

New Officers for Railway Surgeons.—At the sixteenth annual meeting of the American Association of Railway Surgeons, held in Chicago, October 12-17, the following officers were elected: president, Dr. Robert McConaughy, York, Neb.; vice presidents, Drs. Isaac F. Harter, Stronghurst, Ill.; Paul E. Gardner, New Hampton, Iowa; George W. Thompson, Winamac, Ind.; treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa (reelected); secretary-editor, Dr. Louis J. Mitchell, Chicago (reelected), and executive board, Drs. Samuel C. Plummer, Chicago, and David Y. Roberts, Louisville, Ky.

Mayo Clinic Physicians Meet.—The second annual meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic was held at Rochester, Minn., October 8 and 9, under the presidency of Dr. Harold L. Foss, Danville, Pa. The following officers were elected: president, Dr. Clarence G. Toland, Los Angeles; vice president, Dr. Francis G. Aud, Cecelian, Ky.; secretary, Dr. Harold L. Foss, Danville, Pa.; assistant secretary, Dr. Archibald H. Logan, Rochester, Minn.; treasurer, Dr. Arthur H. Sanford, Rochester, Minn., and board of governors, Drs. Edward S. Judd, William F. Braasch and Donald C. Balfour, all of Rochester, Minn.

Clinical Congress Elects.—At the annual meeting of this organization, held October 23, the following officers were

elected: president, Dr. George E. Armstrong, Montreal; vice presidents, Drs. Rudolph Matas, New Orleans, and Horace Packard, Boston; regents for term expiring in 1921, Drs. Alexander Primrose, Toronto; Albert J. Ochsner, Chicago; George W. Crile, Cleveland; Harvey Cushing, Boston; George L. deSchweinitz, Bethlehem, Pa., and William J. Mayo, Rochester, Minn.; regents for term expiring 1922, Drs. John M. T. Finney, Baltimore; James B. Eagleson, Seattle; Charles H. Mayo, Rochester, Minn; J. Bentley Squier, New York, and Dr. Walter W. Chipman, Montreal.

Women Physicians Organize.—As a result of the conferences of women physicians that have been in session in New York City from September 15 to October 25, a permanent organization has been formed, called Medical Women's International Association. The headquarters for the present will be at the office of Dr. Esther C. P. Lovejoy, 637 Madison Avenue, New York City. The following officers have been elected: president, Dr. Esther C. P. Lovejoy, New York City; vice presidents, Dr. Christine Murrell, London, L. Trillier-Landry, Paris, and Kristine Much, Christiania, Norway; corresponding secretary, Dr. Martha A. Welpton, San Diego, Calif.; recording secretary, Dr. Marie Feyler, Lausanne, Switzerland, and treasurer, Dr. Ellen C. Potter, Philadelphia.

New Electro-Therapeutic Officers.—At the annual meeting of the American Association of Electro-Therapeutics and Radiology, held in Philadelphia, September 9-12, under the presidency of Dr. Frank B. Granger, Boston, the following officers were elected: president, Dr. William Martin, Atlantic City, N. J.; vice presidents, Drs. Virgil C. Kinney, Wellsville, N. Y.; S. St. John Wright, Akron, Ohio; Mary L. H. Arnold Snow, New York; William T. Johnson, Philadelphia, and John H. Burch, Syracuse; treasurer, Dr. Emil Heuel, New York (reelected); secretary and registrar, Dr. Byron Sprague Price, New York (reelected), and trustees, Drs. J. Willard Travell, New York; Frederick DeKraft, New York; Frank B. Granger, Boston; Frederick H. Morse, Boston; William L. Clark, Philadelphia, and Edward C. Titus, New York.

Bacillus Botulinus Poisoning in Detroit.—Cases of botulism have been reported in Detroit causing the deaths of five persons and severe illness of two others. At a dinner party, October 18, infected olives were eaten by four diners and a waitress. Of this group one guest and the waitress died. The hostess and another guest became ill and one guest escaped entirely. The olives were also eaten by three members of the household, and of this group all died. The bacillus botulinus was recovered from both the liquor and the olives. The Detroit Department of Health found that the "Curtis Brand" of ripe olives were at fault. On the basis of this information food inspectors immediately placed a ban on the sale of this particular brand. Some 7,000 jars were seized at once and the eighth jar of this lot examined was found to contain a similar organism. On the basis of this finding the entire supply of this brand of olives in Detroit was condemned as unfit for food. Nearly 20,000 jars have been attached.

Distinguished Service Medals for British Surgeons.—At the convocation of the Clinical Congress of the American College of Surgeons, October 24, Major-General Ireland conferred distinguished service medals on Sir Anthony Bowlby of London and Sir Robert Jones of Liverpool, after reading a letter from Secretary of War Baker in which he regretted that the President's illness made it impossible for him to make the presentation himself. The citations accompanying the awards were as follows:

Sir Anthony Bowlby: For exceptionally meritorious and distinguished services to the United States. An eminent consulting surgeon, and while serving with the British Expeditionary Forces in France with untiring zeal he devoted his time and energy toward cooperating with and unreservedly placing at the disposal of the American Expeditionary Forces his eminent talent, broad experience and knowledge of general conditions in preventing wastage among our forces from wounds and disease. His research work in wound bacteriology and evacuation resulted in the saving of many lives among our sick and wounded.

Sir Robert Jones: For exceptionally meritorious and distinguished services to the United States. An eminent orthopedic surgeon and chief of the division of orthopedic surgery in the British Army service, he placed at the disposal of the medical service of the American Expeditionary Forces his eminent talents and broad experience in standardizing methods of treatment of the sick and wounded, and took an active personal interest in class instruction of American medical officers in this very important branch of surgery.

Prohibition Enforcement Act of Interest to Physicians.—The prohibition enforcement act, to make effective the prohibition constitutional amendment, carries sections of interest to the medical profession. It provides that no one but a physician holding a permit to prescribe liquor shall issue any prescription for liquor. This must be after physical examination of the patient if this procedure is possible and, if this course is impracticable, the prescription can be issued on the best information obtainable that the liquor is necessary as a medicine for the ailment. Not more than a pint of spirituous liquor to be taken internally can be prescribed for use by the same person within a period of ten days. No prescription can be filled a second time when spirituous liquor is included in it. Official blanks for filling these prescriptions are to be provided, and these blanks must be used in all cases, except in emergencies. Physicians are to obtain licenses from the Internal Revenue Service. The use of liquor is also permitted in the manufacture of medicinal preparations manufactured according to stated formulas: "patent," patented and proprietary medicines unfit for beverage purposes; toilet, medicinal and antiseptic preparations unfit for beverage purposes; flavoring extracts and syrups unfit for beverage or intoxicating purposes. Permits are required to manufacture these articles but not to sell them. Substantial fines are prescribed for violations, which are increased with recurring offenses.

FOREIGN

Personal.—Dr. Edward Hindle, Kingsley Lecturer and Bye Fellow of Magdalene College, Cambridge, assistant to the Quick Professor of Biology, has been elected to the chair of biology in the School of Medicine, Cairo, Egypt.

French Gratitude Medal for American Physicians.—The *Journal officiel* of Sept. 24, 1919, publishes a list of American physicians and surgeons to whom the silver Médaille de la Reconnaissance française had recently been awarded. The list is reproduced in the *Presse médicale* of October 4.

New Medical Building in Spain.—The Physicians' Association of Madrid has under consideration the building of a new eight story building which will serve as a home for the different medical societies of Spain. The estimated cost of this Palacio de Ciencias Médicas, as it is to be called, is about $1,300,000.

Deaths in the Profession Abroad.—Dr. **E. Bonardi,** professor of medical pathology at the University of Pavia and member of the lower house of parliament.——Dr. **N. Berend,** professor of children's diseases at the University of Budapest, killed in a riot.——The *Nederlandsch Tijdschrift* mentions also the death of Prof. **F. Nissl** of the Institute for Psychiatric Research at Munich.

The Dejerine Endowment.—The widow of the late Professor Dejerine of Paris and Mlle. Dejerine have endowed a fund in charge of the Société de neurologie at Paris in memory of the eminent neurologist who was one of the founders and long president of the society. The income is to be devoted to promote scientific research, clinical or experimental, in the field of neurology, especially to aid those who have distinguished themselves by original research to publish their works with the desirable extent and illustrations, or to facilitate further research by better instrumental or experimental equipment. The funds disposable are to be given exclusively to works the first results of which have been previously communicated to the society. The research worker may or may not be a member of the society, or have worked in collaboration with some member of the society. A further provision states that the funds disposable may be attributed year after year to the same work at the discretion of the society. The candidates may apply for aid from the fund directly or through the intermediation of some member of the society. The works may be published by the society in its official journal, the *Revue Neurologique,* or independently, within two years, and the works may compete for prizes offered elsewhere. It is anticipated that the fund will be increased later by donations or appropriations. The first award will consist of 2,000 francs. Application should be made to the Commission du fonds J. Dejerine de la Société de neurologie de Paris.

LATIN AMERICA

Sanitary Works in Uruguay.—A cablegram from Montevideo announces that the secretary of public works has proposed that an American company be given the contract for the execution of a plan of sanitary works for the whole country. It is estimated that the cost will amount to $19,000,000.

Fiftieth Anniversary of Mexican Medical Society.—The Sociedad Médica Pedro Escobedo of Mexico City held a gala session, August 4, to commemorate the founding of the society fifty years before. The president, Dr. José Irueste

y Roda, spoke on the life and work of the physician's wife, and Dr. A. López Hermosa on the progress in medicine during the half century since the society was founded. The society publishes a journal, *El Observador Médico*, which has just entered on its third series of volumes. The editorial staff consists of Drs. R. López, Santiago Ramírez and L. S. Viramontes. An editorial in a recent number, signed by Dr. Ramírez, laments the free rein given to quacks of all kinds in Mexico, and urges the necessity for organized resistance in the interest of the public. The publishing of a popularly written journal to educate the public in regard to the dangers of quackery is suggested. Dr. Ramírez added: "The medical education of society should be initiated; the need for it is great, from the millionaire to the minister. Society in Mexico is absolutely ignorant of medical culture. For the public, the physician, the cook, the tradesman, all rank alike as regards medicine." There is some agitation in favor of founding a physicians' club, the Casa del Médico. The editorial adds that if this should become a fact, "it should be born with a whip in its hand to lash the commercialists. It is rumored that certain commercialists were already on hand at the meeting to discuss arrangements for the proposed club."

Government Services

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel.

ALABAMA

Birmingham—Dabney, W. C. (M.)
Edmundson, H. C. (L.)
Rogers, G. W. (M.)
Siniard, E. C. (L.)
Burnsville—Walker, L. M. (L.)
Cullman—Culpepper, R. A. (L.)
Fairhope—Godard, C. G. (L.)
Mobile—Sledge, E. S. (M.)
Tuscaloosa—Dixon, R. E. (L.)
Tuscumbia—DesPrez, L. W. (C.)

ARKANSAS

Rush—Drennan, S. A. (M.)
Scranton—Blair, A. A. (C.)

CALIFORNIA

Alcatraz—Yemans, H. W. (M.)
Downey—Zbinden, D. B. (L.)
Fresno—Williams, J. C. (L.)
Long Beach—Scott, L. D. (C.)
Shippey, R. H. (C.)
Los Angeles—Butka, L. J. (C.)
Hammack, R. W. (C.)
Orbison, T. J. (C.)
Oroville—Whiting, F. M. (L.)
Palo Alto—McDowell, A. E. (L.)
Thomas, B. (C.)
San Diego—Irones, R. B. (C.)
San Francisco—Barbour, N. P. (C.)
Ewing, E. E. (L.)
Fleissner, C. M. (C.)
Ghidella, E. J. (L.)
Hatch, E. D. (C.)
Howe, L. P. (L. C.)
Leach, C. N. (C.)
Myre, S. L. (C.)
Reardan, F. B. (C.)
Wolfsohn, J. M. (M.)
Tulare—Chilson, W. C. (C.)

COLORADO

Denver—Goldhammer, S. S. (L.)

CONNECTICUT

Bridgeport—DeWitt, E. N. (L.)
Danbury—Deming, W. C. (C.)
Hartford—Grant, A. S. (L.)
Lyman, E. J. (L.)
Maisien, S. (L.)

DELAWARE

Dover—Behen, W. C. (L.)

DISTRICT OF COLUMBIA

Washington—Adams, F. D. (L.)
Dollman, C. M. (M.)
Hall, A. J. (C.)
Johnson, P. B. (C.)
Kerr, H. H. (L. C.)
Moffett, D. B. (L.)
Reuter, F. A. (C.)

FLORIDA

Lakeland—Griffin, J. D. (M.)
Wilson, J. F., Jr. (C.)
Pensacola—D'Alemberte, C. W. (M.)
McMillan, D. W. (M.)
Pine Barren—Clark, W. A. (C.)
Tampa—Baldwin, R. E. (C.)

GEORGIA

Atlanta—Collier, T. J. (C.)
Lowery, R. R. (C.)
Columbus—Brooks, H. W. (L.)
La Fayette—Coulter, R. M. (C.)
Macon—Sigman, J. M. (M.)
Rome—Simmons, R. O. (C.)
Vienna—Lupo, C. W. (L.)

IDAHO

Castleford—Schwarz, T. E. (M.)
Paris—Moore, C. O. (M.)

ILLINOIS

Anna—Campbell, J. A. (C.)
Aurora—Geyer, C. W. (C.)
Bath—Maupin, H. S. (C.)
Beardstown—Harris, H. H. (L.)
Chicago—Adams, C. (C.)
Bartelt, W. F. (C.)
Berger, J. M. (M.)
Calvin, A. B. (L.)
Carothers, H. C. (C.)
Cutler, I. H. (L.)
Davies, R. E. (L.)
DeBoer, W. (M.)
Harrell, R. W. (L.)
Hayes, D. F. (C.)
Henrichsen, K. J. (C.)
Herrmann, C. B. (L.)
Kelly, R. M. (C.)
Koons, J. E. (L.)
Korby, G. J. (C.)
Leviton, N. D. (L.)
MacGregor, D. E. (L.)
Martin, H. W. (L.)
McGuire, J. W. (C.)
Murray, W. K. (M.)
Phifer, F. M. (M.)
Robison, J. A. (M.)
Strauss, S. (M.)
Tarnowsky, G. de (Col.)
Wheaton, C. L. (M.)
East Moline—Mayos, C. E. (C.)
Elgin—Howell, J. A. S. (C.)
Freeport—Buchanan, J. N. (L.)
Georgetown—Smith, E. M. (M.)
Hoopeston—Weaver, A. C. (L.)
Jacksonville—Norris, F. A. (C.)
Kincaid—Miller, R. J. (C.)
Naperville—Spreng, R. W. E. (L.)
Olney—Worthington, E. J. (L.)
Peoria—Houghland, W. L. (C.)
Ramsey—Staff, E. P. (C.)
Rock Island—Weiss, J. M. (C.)
Shipman—Stone, C. A. (C.)

INDIANA

Arlington—Finlaw, F. H. (L.)
Bloomington—Akin, R. A. (M.)
Blountsville—Gordon, V. (L.)
Brazil—Sourwine, C. C. (C.)
Bremen—Denison, R. C. (M.)
Bristow—Coultas, P. J. (L.)
Corydon—Daniel, J. C. (C.)
Fort Wayne—Fauve, A. E. (C.)
Hammond—White, H. J. (C.)
Indianapolis—Cox, C. E. (L.)
Deer, B. F. (L.)
Solomon—R. A. (C.)
La Porte—Kimball, G. W. (C.)
Monroe City—Belcher, O. L. (L.)
New Albany—Shacklett, H. B. (C.)
Voigt, C. F. (L.)
Ockley—Locke, F. C. (C.)
South Bend—Whitehill, J. E. (L.)
Terre Haute—Burnside, L. A. (C.)

IOWA

Arlington—Hazard, C. M. (L.)
Barnes City—Paradise, J. A. (L.)
Baxter—Hunt, G. C. (L.)
Chariton—Kuhn, L. C. (C.)
Clinton—Jaenicke, K. (M.)
Davenport—Block, C. E. (C.)
Des Moines—Osborn, J. W. (C.)
Stuart, A. B. (C.)
Eldon—Murphy, J. O. (L.)
Fairbank—Ward, L. W. (L.)
Iowa City—Hobby, E. E. (M.)
Marne—Lyon, C. W. (C.)
McClelland—Niehaus, F. W. (C.)
Millersburg—Amick, L. B. (C.)
Missouri Valley—Lusk, E. E. (C.)
Montour—Corns, W. (L.)

KANSAS

Emporia—Harvey, C. C. (C.)
Gridley—Stockton, M. L. (C.)
Lansing—Faulkner, J. T. (C.)
National Military Home—Kraft, F. E. (C.)
Sedgwick—Buley, D. G. (C.)
Valley Falls—Mann, F. P. (C.)

KENTUCKY

Allen—Mayo, H. H. (C.)
Danville—Rawson, V. (C.)
Hardinsburg—Beard, H. J. (L.)
Harned—Moorman, E. (C.)
Lakeland—Render, W. E. (L.)
Lexington—Maguire, J. D. (C.)
Livingston—Walker, E. M. (C.)
Louisville—Duncan, E. (L. C.)
Peabody, J. R. (M.)
Voor, J. B. (C.)
Madisonville—Robinson, L. B. (C.)
Owensboro—Phillips, C. C. (M.)
Water Valley—Bard, C. B. (L.)

LOUISIANA

Lake Providence—Hamley, W. H. (C.)
New Orleans—Bahn, C. A. (M.)
Batson, T. T. (L.)
Belden, W. W. (C.)
Rudolf, T. R. (C.)
Sulphur—Lyons, S. B. (C.)

MAINE

Portland—Ridlon, B. D. (M.)
Wright, C. S. (C.)

MARYLAND

Baltimore—Boehs, C. J. (M.)
Clark, F. H. (L.)
Cross, G. G. E. (L.)
Cross, R. Z. G. (L.)
Finney, W. P. (L.)
Hanna, B. S. (C.)
Krause, L. A. M. (L.)
Ostro, M. (C.)
Pearlstein, P. (L.)
Reese, S. O., Jr. (L.)
Reifschneider, C. A. (L.)
Schapiro, A. (L.)
Singewald, A. G. (M.)
Bowie—Lancaster, G. E. (L.)
Denton—Brumbaugh, B. B. (L.)

MASSACHUSETTS

Boston—Austin, A. E. (M.)
Kau, E. Y. (L.)
Parker, H. F. (C.)
Brookline—Webber, W. G. (L.)
Cambridge—Chase, D. E. (C.)
Chester—Lanpher, H. A. (L. C.)
East Norfolk—Moore, F. P. (L.)
Fitchburg—Fregeau, A. N. (L.)
Fort Banks—Crandall, W. M. (C.)
Framingham—Blanchard, W. B. (L.)
Groveland—Bagnall, E. S. (C.)
Lynn—Limauro, L. H. (C.)
Medway—Wyman, J. H. (C.)
New Bedford—Provost, R. G. (C.)
Newtonville—Clark, C. W. (L.)
Sommerville—Finnerty, C. W. (L.)
Westboro—Jordan, M. M. (C.)
Winthrop—Grainger, E. J. (L.)

MICHIGAN

Ann Arbor—Adair, V. (L.)
Battle Creek—Wencke, C. G. (C.)
Detroit—Barton, C. (M.)
Baskerville, R. J. (C.)
Defnet, W. A. (L.)
Holmes, A. D. (C.)
Kennedy, W. Y. (L.)
Lecklider, A. F. (C.)
O'Brien, W. A. (L.)
Shaw, L. O. (L.)
Taylor, P. B. (C.)
Flint—DeSomoskeoy, V. H. (M.)
Ionia—Kitson, V. H. (C.)
Morenci—Barnes, V. D. (M.)
Munith—Leece, R. H. (L.)
Muskegon—Egan, A. B. (L.)
Norway—Van de Erve, W. (L.)
Phoenix—Kelliher, J. L. (C.)

MINNESOTA

Albert Lea—Kamp, B. A. (C.)
Anoka—Jones, C. S. (C.)
Cannon Falls—Hankee, P. R. (C.)
Coloraine—McHugh, R. F. (L.)
Minneapolis—Dahl, J. A. (L.)
Mach, F. B. (C.)
McCusker, C. F. (C.)
Urban, R. O. (L.)
Northfield—Moses, J., Jr. (C.)
Rochester—Murray, G. A. (L.)
St. Paul—Comstock, A. E. (C.)
Swanson, E. O. (L.)
Wykoff—Walker, J. D. (C.)

MISSISSIPPI

Fort Adams—Lemkowitz, D. G. (M.)
Hattiesburg—Bethea, W. R. (M.)
Natchez—Benoist, E. E. (C.)
North Carrolton—Hays, H. R. (L. C.)

MISSOURI

Clayton—Mackey, D. E. (M.)
DeKalb—Shelton, W. J. (L.)
Edina—Jurgens, H. J. (C.)
Riley, F. P. (L.)
Frankford—Kennedy, J. J. (C.)
Joplin—Royer, D. J. (L.)
Kansas City—Florian, A. J. (M.)
Schorer, E. H. (L. C.)
Thomas, H. S. (L.)
Kennett—Egbert, T. H. (L.)
Luray—Dangerfield, V. S. (L.)
Moberly—Streetor, R. D. (C.)
Princeton—Buren, C. R. (C.)
Rich Hill—Insley, H. W. (M.)
St. Louis—Bell, H. H. (M.)
Bradley, J. M. (C.)
Broadhead, W. C. (C.)
Doris, R. P. (L.)
Freeman, J. M. (L.)
Landree, J. C. (L.)
Marder, J. L. (L.)
Pulliam, M. J. (C.)
Tate, L. L. (C.)

MONTANA

Butte—Phillips, J. H. (L.)

NEBRASKA

Belgrade—Brittell, O. A. (C.)
Blair—Burstien, L. L. (L.)
Gretna—Hilsabeck, L. C. (L.)
Harrison—Cramer, L. L. (L.)
Lincoln—Parks, C. W. (L.)
Normal—Royal, P. A. (C.)
Omaha—Srb, A. F. (L.)

NEVADA

McDermitt—Chaney, O. J. (C.)

NEW HAMPSHIRE

Hanover—Parker, G. H. (C.)
Plymouth—Bell, E. L. (M.)

NEW JERSEY

Camden—Shemeley, W. G., Jr. (L.)
Dennisville—Way, C. W. (M.)
Dumont—Christman, R. A. (L.)
East Orange—Russell, A. B. (C.)
Haskell—Griggs, E. E. (C.)
Jersey City—Sherwood, F. D. (L.)
Kenville—McCormick, H. D. (C.)
Newark—Burne, J. J. (L.)
Kelly, T. J. (L.)
Tidaback, J. D. (L.)
Paterson—Curtis, D. A. (L.)
Verona—Bush, A. C. (L.)

NEW MEXICO

Alamogordo—Holmes, J. G. (C.)
Roswell—Ingalls, H. A. (L. C.)

NEW YORK

Binghamton—Squires, C. A. (M.)
Brockport—Nesbitt, E. N. (L.)
Brooklyn—Cohen, L. L. (L.)
Greenberg, L. (C.)
Harnden, F. (L. C.)
Hendlemon, S. (L.)

Brooklyn—Herriman, F. R. (M.)
Kohlenberg, M. (L.)
Lesser, L. E. (L.)
Mays, A. T. (L.)
Robertson, R. S. (C.)
Weiss, B. (C.)
Wharton, R. J. (L.)
White, B. D. (L.)
Wronker, S. L. (L.)
Buffalo—Bethune, C. W. (L.)
Bott, W. J. (C.)
Shirley, A. R. (L.)
Strong, L. J. (L.)
Catskill—Bove, C. F. W. (C.)
Dunkirk—Sheehe, N. L. (L.)
Gloversville—Pannaci, C. E. E. (C.)
Hornell—Robbins, F. G. (M.)
Ithaca—Balderrey, F. C. (L.)
Kingston—Hutchins, C. P. (M.)
Lancaster—Swierat, J. V. (L.)
Madison—Forward, A. J. (L.)
Marion—Besemar, A. (L.)
Mount Kisco—Brown, E. W. (C.)
Mount McGregor—Latane, H. A. (L.)
Mount Vernon—Lyon, D. O. (C.)
Newburgh—Reed, C. B. (M.)
New York—Adams, E. (C.)
Alter, J. E. (C.)
Barnes, E. J. (M.)
Carroll, J. D. (L.)
Cecil, R. L. (M.)
Coe, H. C. (Col.)
Conboy, J. E. (M.)
Cornwall, L. H. (C.)
Cringle, E. J. (C.)
Crost, N. (C.)
Dealy, F. N. (C.)
Dorsey, H. C. (L.)
Fargo, W. C. (L.)
Field, C. W. (C.)
Golomb, J. (L.)
Harrington, J. J. (C.)
Hein, T. L. (C.)
Henes, E., Jr. (C.)
Lee, E. W. (M.)
Lott, Y. C. (C.)
Mahoney, A. W. (L.)
McCann, W. S. (C.)
Meyer, M. A. (L.)
Myers, A. H. (M.)
Oppenheimer, R. H. (L.)
Patterson, P. M. (M.)
Perkins, C. W. (C.)
Riley, E. J. (M.)
Rudolphy, J. B. (C.)
Sanders, T. M. (C.)
Sasover, L. (L.)
Scheinman, S. (L.)
Schreiber, F. C. (L.)
Schrock, H. D. (M.)
Skversky, A. (C.)
Solkow, M. L. (L.)
Soper, A. E. (C.)
Taft, L. H. (C.)
Unger, A. (C.)
Weigel, E. P. (C.)
Niagara Falls—Rieger, E. M. G. (L.)
Norwood—McNulty, F. T. (L.)
Patchogue—Hicks, E. L. (C.)
Poughkeepsie—Sanderson, R. (M.)
Schenectady—Wozniak, J. L. (L.)
Solvay—O'Brien, C. V. (L.)
Staten Island—Smith, V. G. (L.)
White, P. J., Jr. (L.)
Woodhaven—Boylan, L. B. (L.)
Wyoming—Hubbard, A. W. (L.)
Yonkers—Morrissey, J. G. (L.)

NORTH CAROLINA

Belmont—McLean, C. E. (C.)
Boardman—Munt, H. F. (C.)
Carthage—Grier, C. T. (C.)
Statesville—Davis, J. W. (L.)

NORTH DAKOTA

Bismark—Fisher, A. M. (C.)
Grand Forks—Bratrud, A. F. (C.)
Plaza—Rudell, G. L. (L.)

OHIO

Akron—McDowell, O. C. (L.)
Carey—Bame, S. R. (L.)
Chillicothe—Dunn, A. H. (M.)
Cincinnati—Hale, C. E., Jr. (L.)
Walker, M. F. (L.)
Weiss, H. B. (L.)
Cleveland—Motto, M. P. (L.)
Tucker, J. P. (L.)
Columbus—Gordon, E. J. (M.)
Hays, L. A. (L.)
Dayton—Cline, C. L. (C.)
Williams, H. H. (L.)
Delaware—Postle, F. D. (L.)
Fostoria—Fletcher, A. J. (M.)
Harrison—Tate, R. B. (C.)
Killbuck—Purdy, F. P. (L.)
Lorain—Kasinski, T. J. (L.)
Mount Vernon — Haralson, C. H. (L.)
St. Mary's—Deerhake, W. A. (C.)
Toledo—Beverly, S. S. (L.)
Tenney, C. F. (M.)

OKLAHOMA

Altus—Garnett, D. L. (C.)
Carmen—Heatley, J. E. (L.)
Drumright—Sims, W. P. (C.)
El Reno—Clark, F. H. (M.)
Guymon—Lee, D. S. (C.)
Oklahoma City—Cochran, F. A. Jr. (L.)
Vincent, D. W. (C.)
Sapulpa—Wetzel, G. H. (C.)
Tar River—Sibley, W. A. (L.)
Tulsa—Browne, H. S. (C.)
Woody, W. W. (C.)

OREGON

Bridal Veil—LeFevre, S. F. (L.)
Gloverdale—Shearer, J. E. (L.)
Portland—Butler, F. E. (C.)
Gambee, E. J. (L.)
Hamilton, W. B. (L.)
Sheldon, S. H. (C.)
Story, L. E. (L.)
Yamhill—Carruth, H. E. (C.)

PENNSYLVANIA

Berwick—Hensyl, W. C. (M.)
Cynwyd—Corson, E. F. (M.)
Danville—Milligan, A. M. (L.)
Easton—Coleman, W. L. (L.)
Fisher, R. A. (L.)
Hazleton—Kudlich, M. H. (L.)
Homestead—Norris, S. A. (C.)
Jamestown—Bailey, C. H. (C.)
Lancaster—Spangler, C. C. (L.)
McKees Rocks — Minnick, W. C. (C.)
Muncy—Weigle, H. S. (L.)
New Brighton—Beitsch, W. F. (C.)
New Milford—Park, W. E. (C.)
Philadelphia—Arnett, J. H. (L.)
Durham, R. E. (C.)
Etter, O. R. (L.)
Goodman, R. (L.)
Hawkins, D. B. (L.)
Kinderman, H. W. (L.)
Langdon, R. L. (L.)
Levy, A. (L.)
Llewellyn, C. E. (C.)
Major, C. P. (C.)
Maus, J. P. (C.)
McCutcheon, M. (L.)
Medley, J. E. (M.)
Pike, C. E. (L.)
Raftery, L. (L.)
Ray, D. P. (C.)
Shelly, J. A. (L.)
Walker, H. C. (L.)
Yale, A. W. (M.)
Yaskin, J. C. (C.)
Pittsburgh—Alexander, I. H. (M.)
Laurent, F. V. (L.)
Levy, S. A. (C.)
Steele, P. B. (C.)
Westervelt, H. C. (M.)
Pottsville—Striegel, J. G. (M.)
Punxsutawney—Black, F. W. (M.)
Rutledge—Smith, N. D. (M.)
Shenandoah—Austra, J. J. (L.)
Miller, J. C. (C.)
Turtle Creek—Meley, E. J. (C.)
Uniontown—Treshler, H. J. (L.)
Vandergrift Heights—Boale, J. A. (C.)
Wilmerding—Zimmermann, R. (C.)
York—Hartman, L. M., Jr. (C.)

RHODE ISLAND

Apponaug—Means, P. C. (L.)
Providence—Burns, J. T. (L.)

SOUTH CAROLINA

Campobello—Stevens, C. L. (C.)
Columbia—Galloway, T. C. (C.)
Lake View—Lester, W. E. (C.)
Maning—Barron, E. W. (C.)
Ridgeville—Smith, C. E. (L.)
Ridgeway—Team, B. G. (L.)
Union—Sarratt, S. G. (C.)
Williamston—Epting, E. E. (M.)
Windsor—Johnson, W. R. (C.)

SOUTH DAKOTA

Conde—Herman, L. R. (L.)

TENNESSEE

Bearden—Peters, H. L. (C.)
Chattanooga—Williams, D. N. (L.)
Cowan—Marable, J. H. (C.)
Fall Branch—McCrary, J. R. (C.)
Fordtown—Bowery, E. B. (L.)
Kerrville—Flaniken, R. B. (L.)
Knoxville—Patterson, R. F. (L.)
Memphis—Frierson, S. E. (C.)
Schoolfield, B. L. (L.)
Nashville—Gruver, F. (M.)
Signal Mountain — Martin, C. R. (L.)

TEXAS

Abilene—Mathews, W. J. (C.)
Anson—Hudson, F. E. (C.)
Austin—Tharp, R. A. (L.)
Axtell—Liddell, G. M. (C.)
Bertram—Hall, J. L. (C.)
Big Springs — Buchanan, L. C. G. (C.)
Burnet—Brownlee, C. H. (L.)
Dallas—Dorman, J. H. (M.)
Hastings, L. E. (C.)
El Paso—Butler, A. H. (C.)
Farmersville—Wright, W. C. (L.)
Fort Worth—Parrish, C. C. (L.)
Withers, I. A. (M.)
Galveston—Wall, D. P. (C.)
Houston—Handly, L. L. (L.)
Logue, L. J. (C.)
Smith, C. T. (C.)
Williams, W. O. (C.)
Hutto—Bundy, O. T. (L.)
Keene—Cooke, C. C. (C.)
Lakeview—Langworthy, G. L. (C.)
Lockney—Jones, D. P. (L.)
Manchaca—Currie, R. F. (L.)
Marshall—Murchison, S. R. (L.)
Odessa—Wilson, R. G. (C.)
Paris—Stark, E. H. (M.)
Roby—Allen, R. R. (C.)
San Angelo—Olive, R. A. (C.)
San Antonio—Burkes, D. C. (L.)
Johnston, L. S. (C.)
Sherman—Ricks, H. C. (C.)
Sweetwater—P'Pool, W. F. (L.)
Taylor—Vaughan, T. D. (L.)
Temple—Gooch, F. B. (L.)
Texline—Holt, C. Z. (C.)
Unionville—Haggard, D. C. (C.)
Victoria—Ament, L. G. (L. C.)
McMullen, O. S. (C.)
Waco—Brooks, C. H. (L.)
Eastland, D. L. (M.)
McGlasson, I. L. (M.)
Schenck, C. P. (C.)
Westville—Frazier, L. (C.)

UTAH

Magna—Bird, A. A. (C.)
Ogden—Ingerbretsen, P. (C.)
Springfield—Dunn, F. (C.)

VERMONT

Rutland—Grimnell, W. H. (L.)
South Royalton — Munsell, C. P. (L.)
Swanton—Pierce, H. L. (L.)
West Rupert—Smith, C. H. (L.)

VIRGINIA

Amherst—Strode, B. E. (L.)
Harrisonburg—Harris, L. N. (C.)
Hollins—Black, A. J. (L.)
Lynchburg—Ligon, J. J. (L.)
Norfolk—Kellam, C. D. (C.)
Stringfellow, J. L. (L.)
Portsmouth—Oast, S. P. (L.)
Staunton—Phelps, W. M. (L. C.)
Stuart's Draft—Wagner, I. R. (C.)
Urbanna—Jones, W. P. (C.)

WASHINGTON

Port Gamble—Klamke, E. G. (L.)
Seattle—Hewetson, J. W. (C.)
Spokane—Bryne, J. G. (M.)
Ghering, R. L. (L.)
Tacoma—Allen, R. A. (M.)
Walla Walla—Cowan, H. C. (L.)

WEST VIRGINIA

Eglon—Scherr, A. A. (L.)
Franklin—McCoy, G. P. (L.)
Hansford—Whaley, H. E. (L.)
Morgantown — Edmondson, R. H. (M.)
Richwood—Flora, E. F. (L.)
Williamson—Hatfield, J. E. (L.)
Worthington—Hildreth, B. H. (L.)

WISCONSIN

Eau Claire—Baird, J. C. (L.)
Fulton, H. A. (C.)
La Crosse—Reay, G. R. (C.)
Milwaukee—Bauer, W. W. (C.)
Jenner, A. G. (C.)
Norwalk—Allen, J. S. (L.)
Osseo—Crane, M. C. (C.)
Platteville—Pretts, W. W. (M.)
Superior—Sanders, A. O. (C.)
Wauwatosa—Koch, B. F. (L.)
Whitewater — Midgley, A. E. (L. C.)
Winneconne—Hughes, C. W. (M.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Glendora—Chamberlin, H. H.

GEORGIA

Homerville—Dame, L. H.

MASSACHUSETTS

Nantucket—Dickson, S. H.

NEW YORK

New York—Luttinger, D.
New York—Montague, J. F.
Weston, C. G.
Syracuse—Ehegartner, L. W.

PENNSYLVANIA

St. Petersburg—Texter, E. C.

TEXAS

Dallas—Schaub, G. A.

Foreign Correspondence

MEXICO LETTER

MEXICO CITY, Oct. 19, 1919.

The Mexican Medical Association

The Mexican Medical Association held recently a general meeting at which the directing officers presented the by-laws that they have prepared pursuant to the powers conferred on them. The work of the association will be divided into five sections; namely, medical ethics, scientific subjects, mutual protection, social and physical culture, and propaganda. All physicians duly licensed and practicing their profession in good faith are eligible to membership. Those that signed the proceedings of the first session will be considered as founders. It was decided that the homeopaths could not belong to the association, not because it was intended to display any sectarianism, but because those belonging to that school here are generally very ignorant. The meeting was attended by physicians from the different states who represented the physicians of their respective localities. The president, Dr. Gregorio Mendizábal, delivered an address in which he advised that Mexico should follow the methods through which medical education has reached the wonderful development it has attained in the United States, with which development he is personally acquainted through his various visits at the universities of that country. In view of the number of applications for admission already received and those that are expected from the different

states, the creation of the National Medical Association may already be considered a success.

Tabardillo (Typhus Fever) Transactions

The transactions of the Congreso Nacional del Tabardillo, which met here last January, have been published in a 457 page volume. This publication is due to the interest displayed by the president of the congress, Dr. Terrés, who has even advanced some funds for this purpose. The proceedings have already been distributed to the members who paid the membership fee and in addition will be sent to anybody forwarding the price of the book, namely, 15 pesos (about $7.50). Orders should be addressed to the treasurer, Dr. Ernesto Cervera, Avenida Uruguay, No. 77, Mexico City. This rather high price should not cause surprise in view of the fact that book publishing is very expensive here, among other reasons because of the import duties on paper.

Journal Resumes Publication

The organ of the society "Pedro Escobedo," *El Observador Médico*, which had been suspended for several years, has recommenced publication. The manager of this journal is Dr. Santiago Ramirez, 4/a. calle de Hidalgo, 129.

Yellow Fever

It is reported from the peninsula of Yucatan that new cases of yellow fever have occurred in the city of Merida. As a result of this, notwithstanding the repeated requests made by the merchants of that region, the quarantine established against the port of Progreso has not been raised. It is not known whether any investigations have been made to confirm the etiologic rôle of *Leptospira icteroides* or whether any trials have been made of the merits of curative and preventive serotherapy, or whether neo-arsphenamin has been tried as was done in the northern part of Brazil (THE JOURNAL, Sept. 27, 1919), although it would seem advisable to do all of these things.——The sanitary authorities of Cuba, according to the newspaper *El Dia* of Havana, have sent Dr. Mario Lebredo to our country so that he may make some studies, taking advantage of the opportunity presented by this epidemic.

There are rumors, not confirmed as yet, that there have been cases of the same disease in the port of Manzanillo on the Pacific coast, which would tend to make the situation more serious.

Regulating the Practice of Medicine

A large group of students belonging to the law, engineering, medical, odontology and military medical schools have presented a petition to congress advocating the passage of a law governing the exercise of the liberal professions, so that only those duly licensed may practice them. While it may seem strange, there have been some newspapers that have defended the alleged rights of the "amateurs" to practice the different professions, including medicine, which is the one that would seem most dangerous in the hands of the ignorant.

The Academy of Medicine

The Academy of Medicine held, October 1, the first session of this year, under the presidency of the president of the university, Dr. Macías; after the usual report by the secretary and the address of the retiring president, new officers were elected as follows: vice president, Dr. G. Díaz Lombardo (of the section on urology) who will occupy the presidency during the year 1920-1921, and second secretary Dr. Jesús Arroyo (of the section on internal medicine). According to the by-laws, Dr. Emilio Montaño, of the section on ophthalmology, became president for this year. To celebrate this event a banquet was held which, in addition to the members of the academy, was attended by the honorary members, Drs. Licéaga, Mendizábal, Villada, Ramirez de Arellano and Soriano.

In the meeting held, October 8, Dr. González Urueña presented a paper on the use of carbon dioxid snow for the treatment of lupus erythematosus and acne rosacea, presenting two patients nearly cured (one of lupus and the other of acne). Urueña, after mentioning the experiences of Swedish and American authors and his own, advocated this method of treatment for these diseases.——In the session held on the 15th, Professor Cordero, of the section on natural history, read a paper on the yeast of pulque which he has been able to isolate and grow, and which, when planted in unfermented maguey, produces an alcoholic aromatic liquor that does not possess the disagreeable smell and taste of pulque. He suggested the possibility of preparing a kind of pulque that would be less harmful than that consumed at present by the poorer class of Mexico, and pointed out the possibility of using for therapeutic purposes the yeast of pulque instead of that of beer. Cordero exhibited also a sample of alcohol which could be used for pharmacologic and industrial purposes and is obtained through the fermentation and distillation of the maguey pencas. These are the waste products which are left after pulque is manufactured and which are now thrown away.——The academy appointed as honorary member Dr. J. Ramón Icaza, who has belonged to the academy for more than forty-five years. ——The department of sanitation has extended the courtesies of the bacteriologic laboratory to those members who wish to take advantage of the opportunities for research thus available.

The President of the University of Madrid

The newspapers have mentioned the fact that Dr. J. Rodríguez Carracido, a noted chemist and president of the University of Madrid, is a member of a Spanish delegation leaving soon for the United States. If this is true, the Spanish colony in Mexico will invite him to come to this country and deliver some lectures.

Monument to a Physician

Some steps have already been taken to erect a monument in honor of Dr. Belisario Domínguez in one of the cities of Chiapas, the state in which he was born. Dr. Domínguez was murdered in 1914 when he represented his state in the senate and public opinion has ever since attributed his murder to the dictator Huerta and some of his ministers.

LONDON LETTER

LONDON, Oct. 2, 1919.

Opening of the Medical Schools

The first opening of the session at the medical schools after the war, which is about to take place, marks a new epoch in medical education in this country—the inauguration of research clinics in the London hospitals. In previous letters this innovation has been described at the London Hospital (THE JOURNAL, April 12, 1919, p. 1091) and at Guy's Hospital (September 13, p. 849). At University College Hospital, Dr. T. R. Elliott has been appointed director of the medical clinic, and at St. Thomas', Sir Cuthbert Wallace. At St. Bartholomew's Hospital, Sir Archibald Garrod will preside over the medical, and Mr. G. E. Gaske over the surgical research departments. At Charing Cross Hospital, an institute of pathology for teaching and research has been established. It will have a staff of five medical teachers and investigators, of whom the principal will be Dr. W. W. C. Topley. The institute will carry on investigation and research in connection with the hospital, and give the medical students in the final years of their course a thorough grounding in pathology and bacteriology before they proceed to their specialized studies in medicine and surgery. Research work will have a foremost place in the activities of the institute, and the members of the staff will devote their full time to this and to teaching. In order that they may do this, their salaries have been arranged on a scale which will enable them to carry on their work without financial worry or anxiety.

It is anticipated that the number of students who will enter the medical schools will be greater than ever. This is due to two principal causes: A large number of youths have passed directly into the army from the secondary schools without the opportunity of choosing a profession, and the survivors are now in a position to select one. The government has undertaken to make generous grants toward the expenses of ex-service men who will take up medicine. This will induce many who might have done otherwise to take up the profession. The second principal cause of the influx is the return of those who had registered as medical students in 1914-1915 but had not attained a sufficiently advanced standard to entitle them to exemption from conscription. In a lesser degree the opening of most of the London medical schools to women students has tended to increase the roll. Of the twelve London medical schools, the only ones now not open to women are the Middlesex, Guy's, St. Bartholomew's and St. Thomas'. During the war, the shortage of male medical students and of male physicians in civil practice greatly increased the number of women students. The numbers of entry at the various medical schools cannot yet be given, but it may be stated that the new entries at the London Hospital are already more than 100, as against an average

of between seventy and eighty. During the second and third years of the war, fears were expressed that in four or five years there would be an insufficiency of physicians in the country, owing to conscription; but it is now considered that this will not occur. The Irish and Scottish medical schools were full of students all through the war. In the case of Ireland, this was due to exemption from conscription. In the case of Scotland, the reason was more creditable. It was due to the fact that Scottish boys at 16 are generally as advanced as English boys of 17 and 17½, and are thus in a position to begin professional studies at an earlier age. Not only is it believed that there will be no shortage of physicians, but it is feared by some that there is a possibility of the profession's being overcrowded—a condition that existed before the passage of the insurance act.

Reunion of the Tip of the Nose

Remarkable reports have been published from time to time of reunion of severed fingers, but few cases appear to have been recorded of reunion of a severed nose. Mr. J. O. Skevington, F.R.C.S., has reported a case in the *British Medical Journal*, which has also attracted attention in the lay press. A man was admitted to King Edward VII Hospital, Windsor. While he was grooming a restive horse, a skylight fell and, breaking, cut off the end of his nose. In addition to the tip, the part missing included about one third of the left ala and two thirds of the right ala, besides the lower part of the septum and a small portion of the upper lip. A messenger sent to the stable succeeded in finding the missing part, and about an hour after the accident it was sutured into place. Under a dressing saturated with physiologic sodium chlorid solution, primary union took place, and the resulting effect is very good.

Increased Fees of Physicians

The great increase in the cost of living and in the expenses of medical practice, such as the maintenance of cars, gasoline and chauffeurs' wages, has led to an increase in physicians' fees. This has taken place gradually first at one part of the country and then at another. The amount of the increase varies, but may be taken to average 50 per cent. Some consultants have raised their fees from $10 to $20. The question of an amended rate of remuneration for panel physicians is to be considered by a meeting held under the auspices of the British Medical Association. In London the ministry of health has decided to pay a war bonus to panel physicians on the following basis: (*a*) a payment of 30 per cent. of the physicians' insurance capitation fees for treatment (up to a maximum of $750) in the case of every physician who shows that his total net professional income from all sources does not exceed $2,500 a year; (*b*) a payment of 20 per cent. (up to a maximum of $1,500) when the income exceeds $2,500 but does not exceed $6,000; (*c*) a payment of 15 per cent. (up to a maximum of $1,300) in all other cases.

PARIS LETTER

PARIS, Oct. 9, 1919.

The Advisory Committee of the Army Medical Corps

M. Clemenceau, minister of war, has decided to appoint a number of civilian physicians on the advisory committee of the army medical corps. He is moved to do this by reason of the eminent services that the civilian physicians rendered the army during the course of the war. In the selection of civilian physicians to act on the advisory committee such physicians, surgeons and pharmacists will be chosen as are well known and whose works are authoritative, even though they may not have acquired the highest rank from a strictly military standpoint.

Reorganization of the Special School of the Army Medical Corps

An order has been issued providing for the reorganization of the Ecole du service de santé militaire de Lyon. The purpose is to develop a maximal efficiency among the physicians, surgeons and pharmacists of the army medical corps.

In accordance with this order, the selection of candidates for this school, as provided for by competitive examinations, will henceforth be made from among students of all grades of scholarship. The youngest students may be enrolled in the army medical corps, and yet continue their studies in their original medical schools, which are thus called on to compete in the training of army physicians. The presence of approved candidates will not be required at Lyons except during their last years of study. New rulings facilitate also their admission to externships and internships in civilian hospitals, and permit them to perform these duties under the same conditions as their civilian associates. As a recompense for those students who shall have been admitted to an internship in a hospital, they will be entitled to certain special privileges as affecting their career. Thus, prospective army physicians and pharmacists will in all respects have the benefit of the same educational advantages and of the same scientific resources as the civilian students. Students promoted to the rank of *médecins aides-majors* will no longer, on leaving the Ecole de Lyon, proceed directly to the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce, as they did formerly, for their further training, but will first spend a year of service in the large military hospitals. It is thought that after they have participated in real military life for a certain length of time they will be better prepared in every respect to profit by the specialized instruction of the Ecole d'application du Val-de Grâce.

Organized Endeavors to Increase the Birth Rate of France

The Congrès de la natalité française, organized under the patronage of the presidents of the French chambers of commerce, convened at Nancy, September 25 to 28. At this inaugural meeting, M. Auguste Isaac, honorary president of the chamber of commerce of Lyons, set forth in detail the working program of the society. Dr. Jacques Bertillon, president of the Alliance nationale pour le relèvement de la natalité française, gave some very impressive statistics in support of the conclusions of M. Isaac.

Among the reports presented to the various committees of the congress we note especially the reports on the campaign against tuberculosis and insanitary dwellings, on infants' nurseries and day nurseries for working mothers in factory towns, on the propaganda against depopulation, on the creation in each community of a birth rate promoting bureau and of study centers, presided over by competent persons, with a view to improving moral and social standards, and on the necessity of making a special appeal to all associations that are interested in contributing to this movement for the uplift of France. Other subjects that came up for discussion were: the different forms of legislative action; the question of indemnities for excessive family burdens; military service; aid to unmarried mothers, and the law pertaining to succession.

Enlargement of Medical School

The minister of public instruction has filed a bill with the chamber of deputies providing for an appropriation of 5,500,000 francs for the securing of suitable territory and for the erection of buildings required by the Faculté de médecine de Paris in its plan of enlargement.

Men Disabled by the Loss of Limbs in the War

An assembly of men who have become disabled through the loss of limbs in the war, and of men who have received medical discharges for other reasons, together with war widows, took place recently at Bar-le-Duc, under the presidency of M. Maginot, of the chamber of deputies, and a number of resolutions were passed, the principal ones of which demand that (1) a certificate showing the nature and origin of war wounds must be furnished at any time to those who may require such a certificate; if occasion should arise, also a duplicate must be furnished; (2) a time limit shall be established within which a pension case referred to a court of appeal must come to trial, in order that the payment of pensions in such cases may be accelerated.

In the same connection, M. Constant Verlot, deputy from the department of the Vosges, has filed a bill with the chamber of deputies which has in view the granting of special concessions to military pensioners and to civilian victims of the war who may wish to acquire small rural holdings. This bill provides that they shall be granted loans at 1 per cent. under the usual rate.

Changes in the French Population in 1918

The minister of labor has completed the birth and mortality statistics for France for the year 1918. These statistics show that the civil population of France decreased during the year 1918 by 389,575, not counting the war losses.

These statistics, based on civil records, continue to cover only the seventy-seven departments that were not directly affected by military operations. This is the same as it was during the first four years of the war. It will be the same

for the year 1919, and not until the beginning of 1920 will the statistics of all French territory, made complete by accession of Alsace and Lorraine, be included. If one compares the statistics of the years 1917 and 1918, for the seventy-seven departments of which account was taken, one will note that last year shows not only the persistance of an excess of deaths over births, but even an increase of the excess over that of the preceding year. In 1917, the population of the seventy-seven departments not invaded decreased 269,838, whereas the decrease in 1918 has risen to 389,575. This result is due to the considerable increase in the number of deaths during the second half of 1918, ascribable to the influenza epidemic; for the number of births showed a slight increase over 1917. A comparison of the statistics of the years 1917 and 1918 is given in the accompanying table.

DEMOGRAPHIC STATISTICS FOR THE YEARS 1917 AND 1918

	1918	1917
Births	399,041	343,310
Deaths	788,616	613,148
Excess of deaths over births	389,575	269,838
Marriages	177,872	158,508
Divorces	8,121	5.572

An analysis of the table reveals the fact that in 1918 there was: (1) an increase in the number of marriages; (2) a corresponding increase in the number of births, and (3) an increase in the number of deaths. This increase in mortality affects exclusively the second half of last year. During the first half of 1918, 316,077 deaths were recorded, as compared with 354,554 during the first half of 1917; and during the second half of 1918, 472,539 deaths were registered, as against 258,594 in 1917. According to the preceding figures, the number of civil victims claimed by the influenza last year may be placed at approximately 200,000.

Pupils of the Marine Medical Department

The auxiliary officers of the medical corps (physicians and pharmacists), and students of the Marine Medical Department, who entered the Ecole principale du Service de Santé de la marine de Bordeaux in 1913, who have not finished a year of military service and who have not finished their studies, will be debarked and sent immediately to the Ecole de Bordeaux, where they must report not later than Nov. 1, 1919.

Franco-American Amity

Mrs. William Astor Chanler, president of the "French Heroes' La Fayette Memorial Fund," and John C. Moffat, chairman of the executive committee of this society, recently received, at one of their offices, certain representatives of the French press, to whom they set forth the new plans and purposes of the American welfare societies, which intend to form a federation in order to concentrate their efforts and thus make them more effective. Mrs. Chanler and Mr. Moffat have been appointed as special delegates in France to acquire into the needs of the hour and to ascertain the best means of meeting the situation.

American Physicians Decorated

Among the physicians recently decorated with the Médaille de la Reconnaissance française for services devoted to the care of the wounded during the war appear the names of the following Americans: Drs. Charles Leach, Edward Case, William Johnston, David Edmond Smith, Alfred Malabre, Basilis Valdes and James Wyant.

Personal

M. Eugène Brieux, member of the French Academy, has been made, on the recommendation of the minister of war, commander of the legion of honor, with the following citation:

Exceptional distinctions: He devoted himself wholeheartedly, during the period of four years, to those blinded in war. He created and organized throughout the country numerous schools for their reeducation.

Death of Dr. Michel Gangolphe

Dr. Michel Gangolphe, agrégé professor at the Faculté mixte de médecine et de pharmacie de Lyon, formerly chief surgeon of the Hôtel-Dieu Hospital of this city, is dead at the age of 61. Gangolphe, who was one of the most brilliant pupils of Ollier and of Poncet, was known by his works on bone surgery and especially by a work, which has become an authority, on "Les maladies infectieuses des os" (Infectious Diseases of the Bones).

Deaths

Henry Weightman Stelwagon ⊕ the eminent dermatologist of Philadelphia; aged 65; died in Philadelphia, October 18, from angina pectoris. He was born in Philadelphia, and was graduated from the medical department of the University of Pennsylvania in 1865. After a term as intern in the Philadelphia (Blockley) Hospital he spent two years in Vienna and Berlin. He was physician in charge of the Philadelphia Dispensary of Skin Diseases from 1880 to 1890; instructor in dermatology in his alma mater from 1885 to 1890; clinical professor of dermatology in the Woman's Medical College of Pennsylvania, Philadelphia, from 1898 to 1907, and professor of dermatology in Jefferson Medical College since 1890. He was dermatologist to the Philadelphia Hospital from 1888 to 1915, and since that date consulting dermatologist. He was a member of the American Dermatological Association and president in 1900; also a member or honorary member of many dermatologic societies in this country and abroad. In addition to Dr. Stelwagon's textbooks on "Essentials of Diseases of the Skin," which first appeared in 1890, and his "Treatise on Diseases of the Skin," which appeared in 1901, he translated and edited Mracek's "Atlas of Skin Diseases." Dr. Stelwagon's death while in the full vigor of manhood is greatly to be deplored.

Stephen Henry Lutz ⊕ Brooklyn; Dartmouth Medical School, Hanover, N. H., 1895; aged 47; president of the Kings County Medical Society; a member of the American Otological Society; American Laryngological, Rhinological and Otological Society; and American Academy of Ophthalmology and Oto-Laryngology; surgeon to the ear department of the Brooklyn Eye and Ear Hospital; otologist to the Bushwick Hospital; consulting laryngologist to the Bedford Dispensary; died at his home, October 17, from heart disease.

James Frederick Smith ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1882; aged 62; a fellow of the New York Academy of Medicine; a specialist on diseases of the eye, ear, nose and throat; assistant surgeon of the eye department of the Manhattan Eye, Ear and Throat Hospital, and a member of the staff of the Post-Graduate Nose and Throat Hospital; died at his home, October 18, from pneumonia.

James Perry Duckett, Anderson, S. C.; Jefferson Medical College, 1874; aged 68; a member of the South Carolina Medical Association; for several terms a member of the city council of Anderson, a member and for a time chairman of the local board of health; for fifteen years a member of the board of trustees of the city schools; and for several terms physician of Anderson County; died in the Anderson County Hospital, October 10.

Matthew Charles McGannon ⊕ **Major, M. R. C., U. S. Army,** Nashville, Tenn.; McGill University, Montreal, 1885; aged 62; professor of surgery and clinical surgery in Vanderbilt University, Nashville; chief surgeon of the Woman's Hospital; and attending surgeon at the Vanderbilt Hospital and Nashville City Hospital; recently appointed surgeon-general of Tennessee; died at his home, October 9, from heart disease.

Ernest Eugene Roberts ⊕ Sawtelle, Calif.; Marion-Sims College of Medicine, St. Louis, 1899; aged 49; who had served for about four years in the Philippine Islands as a contract surgeon, and was afterward commissioned lieuentant and captain, Medical Reserve Corps, and was honorably discharged, Feb. 17, 1919; was shot and killed in Los Angeles, October 11.

Martin D. Foster, Olney, Ill.; Eclectic Medical Institute, Cincinnati, 1882; Hahnemann Medical College, Chicago, 1894; aged 58; mayor of Olney in 1895 and 1902; for six terms congressman from the Twenty-Third Illinois District, and thereafter a member of the government commission to adjust war mineral claims in the Western states; died at his home, October 20.

Alfred William Anderson ⊕ Lakewood, Ohio; Cleveland Homeopathic Medical College, 1902; aged 40; formerly health officer of Lakewood; who was honorably discharged as first lieutenant, M. C., U. S. Army, Jan. 3, 1919; a member of the staff of the Lakewood Hospital for eleven years; died in that institution, October 12, from cerebral hemorrhage.

⊕ Indicates "Fellow" of the American Medical Association.

Cornelius S. Van Riper, Pasadena, Calif.; College of Physicians and Surgeons in the City of New York, 1859; aged 82; for forty years a practitioner of Paterson, N. J.; for three terms president of the Passaic County (N. J.) Medical Society and consulting surgeon to the Passaic and Paterson General hospitals; died at his home, October 9.

Thomas Finlie Miller, Glasgow, Ky.; University of Louisville, Ky., 1909; aged 34; a member of the Kentucky State Medical Society; who was honorably discharged as first lieutenant, M. C., U. S. Army, May 29, 1919, after having served with a medical unit in France; died at the home of his father in Tompkinsville, October 12.

Porter Farley, Rochester, N .Y.; College of Physicians and Surgeons in the city of New York, 1874; aged 79; a member of the Medical Society of the State of New York; a veteran of the Civil War; coroner of Monroe County, N. Y., in 1877 and 1883; twice president of the Rochester Historical Society; died at his home, October 18.

Cushman Allen Sears, Portland, Conn.; New York University, New York City, 1862; aged 79; a member of the Connecticut State Medical Society; medical director of Grand View Sanitarium, Windsor, Conn., in 1902; a member of the medical staff of Middlesex Hospital, Middletown, Conn.; died at his home, October 20.

Matthew J. Rodermund, Madison, Wis.; Bennett Eclectic Medical College, 1887; aged 65; notorious because of his expressed belief that smallpox was not contagious; died from heart disease, October 12, on a train near Chippewa Falls while en route to his home.

John Jacob Lindsay, Manchester, Iowa; Bellevue Hospital Medical College, 1883; aged 61; for ten years a member of the school board of Manchester and for a portion of that time president of the board; died in the State Hospital, Independence, Iowa, October 6.

Harvey D. Hockenberry, West Sunbury, Pa.; University of Wooster, Cleveland, 1879; aged 68; a member of the Medical Society of the State of Pennsylvania; for ten years medical inspector of Butler County for the state board of health; died at his home, October 8.

Joseph Nicephore Aubin, Peshtigo, Wis.; Ecole de Médecine et de Chirurgie, Montreal, Que., 1894; aged 54; a member of the Wisconsin State Medical Society; died in St. Joseph's Hospital, Peshtigo, October 12, from pleurisy complicating typhoid fever.

Albert Jefferson Peterson, Goodwater, Ala.; Vanderbilt University, Nashville, Tenn., 1889; aged 60; a member of the Medical Association of the State of Alabama; secretary of the Coosa County Medical Society in 1910; died at his home, September 21.

Charles M. Faulkner, Montra, Ohio; Cincinnati College of Medicine and Surgery, 1883; aged 59; a member of the Ohio State Medical Association; died in the Cincinnati Sanitarium, College Hill, Cincinnati, October 5, from cerebral hemorrhage.

William W. Robertson, McComb, Miss.; Vanderbilt University, Nashville, Tenn., 1886; aged 55; postmaster of McComb; died on an Illinois Central train, while returning home from New Orleans, September 29.

Joseph Hoyt Mosher, Tuxedo, N. Y.; Fordham University, New York City, 1913; an intern at the White Haven (Pa.) Sanatorium in 1916 and 1917; died in that institution, October 17, from pulmonary tuberculosis.

James Donat Graber, Limerick Centre, Royersford, Pa.; Bellevue Hospital Medical College, 1870; aged 74; a member of the Medical Society of the State of Pennsylvania; died at his home, October 6, from heart disease.

John F. Simmons, Pine Bluff, Ark.; Jefferson Medical College, 1865; aged 86; a Confederate veteran; organizer and first president of the Simmons National Bank, Pine Bluff; died at his home, October 1.

William Wilbur Williams, Hilton, N. Y.; University of Buffalo, N. Y., 1881; aged 66; a member of the Medical Society of the State of New York; died at his home, October 16, from arteriosclerosis.

Henry Washington Stephens, Anaconda, Mont.; St. Joseph (Mo.) Medical College, 1893; aged 57; a member of the Medical Association of Montana; mayor of Anaconda in 1900; died at his home, October 12.

Andrew Uren, Hollywood, Calif.; University of Michigan, Ann Arbor, 1895; aged 61; for many years physician for the Montreal Mining Company, Montreal, Wis.; died at his home, about October 7.

Joel Taylor Barker, Danville, Ind.; Bellevue Hospital Medical College, 1870; aged 71; a member of the Indiana State Medical Association; died at his home, October 11, from arteriosclerosis.

William F. Work, Charlestown, Ind.; Eclectic Medical Institute, Cincinnati, 1875; University of Louisville, Ky., 1887; aged 69; died at his home, October 7, from cerebral hemorrhage.

Daniel Peck Cook, Clay Center, Kan.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1881; aged 67; died at his home, October 2, from cerebral hemorrhage.

Thomas A. Pope, Cameron, Texas; Louisville, Ky., Medical College, 1870; aged 73; a veteran of the Civil War; twice postmaster of Cameron; died at his home, October 5.

Charles William Fox, Philadelphia; Long Island College Hospital, Brooklyn, 1865; aged 76; died at his summer home in York Harbor, Me., October 8, from myocarditis.

William J. Rogge, Portland, Ore.; Medical College of Ohio, Cincinnati, 1891; aged 64; died at his home, September 10, from cerebral hemorrhage.

Samuel C. Hewitt, Chatham, Ill. (license, years of practice, Illinois, 1878); aged 84; a veteran of the Civil War; died at his home, October 6.

James M. Schee, Halbur, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 59; died at his home, September 19.

William Johnson Hurt, Waynetown, Ind.; Rush Medical College, 1873; aged 69; died at his home, October 8, from pneumonia.

Edward Calvin Ballard, Greenville, Ohio; Eclectic Medical Institute, Cincinnati, 1871; aged 70; died at his home, October 1.

William Finley Semple ✠ Chicago; Rush Medical College, 1881; aged 58; died at his home, October 12, from angina pectoris.

James Truman Dewey, Caytesville, Mo.; Missouri Medical College, St. Louis, 1888; aged 68; died at his home, September 15.

Marriages

HARRY ARTHUR STECKEL, Kings Park, N. Y., to Miss Carolyn E. Moon of Binghamton, N. Y., at Lake Mohawk, N. Y., September 29.

HUGH J. DAVIS, Capt., M. C., U. S. Army, Austin, Texas, to Miss Grace Reynolds Douglas, at Wilkes-Barre, Pa., October 18.

BENJAMIN PRESCOTT BURPEE, Manchester, N. H., to Miss Marguerite Rose Burke of Greenfield, Mass., October 11.

LAWRENCE OSMOND CRUMPLER, Schoolfield, Va., to Miss May Pace Talbott of Danville, Va., October 15.

FRANK THOMAS BREENE to Miss Bessie Pearl Millard, both of Iowa City, at Red Wing, Minn., October 15.

EDGAR ARTHUR DRAPER, Cape May, N. J., to Miss Pauline Elizabeth Gaskins of Philadelphia, October 18.

ROBERT LUCAS OZLIN, Dundas, Va., to Miss Bertha Marjorie Kelly, at New York City, October 15.

RICHARD LEE SILVESTER, Washington, D. C., to Miss Susette Parran, at Port Republic, Md., October 25.

LEO RAYMOND GORMAN, Reading, Pa., to Miss Katherine McMullen of Catasauqua, Pa., October 11.

SANFORD B. HOOKER, Boston, to Miss Lillian Augusta Osgood of Claremont, N. H., October 11.

DANA FLETCHER DOWNING, Winnebago, Wis., to Miss Rose Emma Akins of Warren, Ill., October 18.

FLOYD WILLCOX MCRAE, JR., Atlanta, Ga., to Miss Eleanor Deming Stout of Chicago, November 1.

JAMES SAMUEL MITCHNER, Edenton, Va., to Miss Bessie Williams of Arvonia, Va., October 16.

ROY LAFAYETTE OWENS to Miss Mary Veronica Murphy, both of Chicago, October 1.

LELAND EGGLESTON COFER to Miss Luisita Leland, both of New York City, October 15.

CHARLES ALLEN STONE, St. Louis, to Miss Sylvia Lora of Toledo, Ohio, October 22.

CORNELIUS JOSEPH CORCORAN to Miss Dora Kalt, both of Milwaukee, October 15.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PINEOLEUM ADVERTISING METHODS

Capitalizing the Name and Position of the President of the American Medical Association

To the Editor:—Enclosed is a postal card which a physician in Oklahoma has sent me together with thirty-six cents in stamps. The envelope was addressed to me at the address of the Pineoleum Compay. The post-office corrected the address and sent it to me. It is evident, therefore, that the physician in Oklahoma thought that I was sending these postals as an employee of the Pineoleum Company, or, at least, was endorsing their products.

Kindly do me the favor to publish this letter in THE JOURNAL as a protest against the dishonesty of this method of advertising. What is quoted from an article that I wrote appeared originally in the *New York State Journal of Medicine* and was abstracted in THE JOURNAL of the American Medical Association of August 2, 1919. The obvious inference to be drawn from this postal is that I referred to the products of the Pineoleum Company in that article. I did not have the products of the Pineoleum Company in my mind. I never have used their products and never prescribed them.

This form of advertising is done with intent to deceive and did deceive the doctor in Oklahoma. It was therefore a successful falsehood, its success depending on the false use of the name of the President of the American Medical Association to bolster up the sale of the product.

I resent the use of my name in connection with the quack advertising of nostrum venders. The low, vulpine cunning of the method used is on the same level as the deceit and dishonesty which use this form of advertising to the injury of my name and reputation. As President of the American Medical Association I must insist that you protect me by publishing this letter in THE JOURNAL, giving it as widespread publicity as possible.

ALEXANDER LAMBERT.

TREATMENT OF INFLUENZA
By A. LAMBERT, M. D., New York, Pres. A. M. A.

408-10-12 West 13th Street
New York City

Dear Doctor:

"The 'Flu' is coming back in October to scourge the whole world. I expect the plague to come back as soon as people begin to live indoors again. The death toll will be serious, but I do not expect it will be as bad as it was last winter."
—Dr. Royal S. Copeland, *Chief of the New York Health Department.*

"The persistent spraying of the nose and pharynx with some form of silver salt, or some form of mild disinfectant, materially aids in confining the infection in its early stages to the upper passages, and this procedure gives the impression, when tried in a large number of patients, that it prevents in many cases the spread downward into the bronchi and thus limits pulmonary complications."—Extract from "The Treatment of Influenza," by A. Lambert, M.D., in the Journal of the American Medical Association, August 2nd, 1919

We have letters from a large number of physicians confirming the above extract, and with the further statement that as a *preventive* and *relieving* agent there is no combination before the profession today so satisfactory as Pineoleum.

If you have not received recently, a complimentary Outfit, return this card with 36 cents in stamps and we will forward a regular $1.00 package by prepaid Parcels Post.

THE PINEOLEUM COMPANY

Postal card capitalizing the name and position of the President of the American Medical Association.

[COMMENT.—"Pineoleum" is a "patent medicine" advertised in the cheapest and most effective way—by the aid of the easy going and complacent physician. In 1906 Pineoleum was being marketed by the Winslow Laboratory of New York City, which also put out three or four other nostrums—"Morumalt," "Egeriol," "Digestylin," and "Ford's Nucleo-Peptone." Pineoleum was advertised to the public then as it is advertised now, via the medical profession. Physicians are circularized and are offered a petty graft in the form of a cheap nebulizer and a sample bottle of Pineoleum. Some time ago the company seems to have developed a scheme whereby physicians could make money "dispensing Pineoleum nebulizer outfits at more than 140 per cent. profit." The Pineoleum concern for years has also polluted the stream at its source by attempting to get the secretary of the senior class of every medical school to distribute its free nebulizer outfits to members of the class and receive therefor 5 cents for each outfit distributed! The life history of Pineoleum is that of the typical nostrum. Epidemics, of course, are utilized as opportunities for pushing the product. In 1911 a card was sent out featuring "A Special LaGrippe Offer"; in 1916 the profession was circularized recommending Pineoleum as "The Ideal Prophylactic" in infantile paralysis; during the past year influenza has again been the selling point.

The case described by Dr. Lambert is not the first example of the misuse of names and statements of physicians. Last December the Pineoleum concern was sending out an advertising card in which Dr. McCoy of the United States Public Health Service was quoted as recommending Pineoleum as the "bulwark of prevention" and "battery of relief" in influenza. Of course, Dr. McCoy never said anything of the sort. A protest against this particular falsehood resulted in another card being sent out several months later by the Pineoleum people purporting to explain and apologize for the misquotations and putting the blame on the printer. The "apology" ended with a postscript (in larger and bolder face type than the body of the card) that urged physicians to "secure our liberal introductory advertising proposition on improved oil nebulizer outfits." From the standpoint of publicity for Pineoleum, the "explanation and apology" was doubtless as good an advertisement as the original card of misrepresentation.—ED.]

LAVORIS

Report of the Council on Pharmacy and Chemistry

Lavoris was considered by the Council in 1913, and its proprietors—the Lavoris Chemical Company—were advised that the preparation was inadmissible to New and Nonofficial Remedies because of conflict with Rules 1, 4, 6, 8 and 10. No report was published at that time. As the preparation is still widely advertised to physicians, the Council has again examined Lavoris and authorized publication of the following report.

W. A. PUCKNER, Secretary.

In recent years Lavoris has been widely advertised as "THE IDEAL ORAL ANTISEPTIC," particularly to the dental profession. A printed card sent out by the Lavoris Chemical Company in 1913 read: "LAVORIS, the Pyorrhea Remedy. The Original ZINC CHLORIDE Mouth Wash. One grain zinc to each ounce." The card also gave a "formula" to the effect that each pint of Lavoris contained:

Zinc Chloride	1.040
Resorcin	0.520
Menthol	0.400
Saccharin	0.195
Formalin	0.195
Ol. Cassia Zeyl	0.780
Ol. Caryophyl	0.195

Advertisements now appearing in medical journals repeat the older "formula" except that resorcin is omitted. The formula while seemingly frank and open is in reality indefinite and misleading in that no denomination of weight is given for the various constituents. It is uncertain, for example, if the figures in the formula are intended to represent grains, grams or percentages of the several constituents. In view of the indefinite statement of composition, a chemical examination of Lavoris was undertaken in the A. M. A. Chemical Laboratory. The report of the laboratory follows:

Zinc.—This was determined electrolytically. Fifty c.c. gave 0.026 gm. zinc and 100 c.c. gave 0.0531 gm. zinc. The average is 0.0526 gm. zinc in 100 c.c. This is equivalent to 0.1102 gm. anhydrous zinc chlorid in 100 c.c.

Chlorid.—After decolorizing some of Lavoris with chlorid-free animal charcoal, the chlorid was determined by the Volhard method. Twenty-five c.c. Lavoris required 4.328 c.c. tenth-normal silver nitrate solution equivalent to 0.01535 gm. chlorid (chloridion) or 0.0614 gm. in 100 c.c. A second 25 c.c. of Lavoris required 4.112 gm. tenth-normal silver nitrate solution equivalent to 0.01458 gm. chlorid (chloridion) or 0.05832 gm. in 100 c.c. Average is 0.05985 gm. This is equivalent to 0.1150 gm. zinc chlorid in 100 c.c. This agrees closely with the foregoing zinc determination.

Resorcin.—The method of the U. S. Pharmacopeia was used. The total bromin absorption of 25 c.c. Lavoris was 3.68 c.c. tenth-normal bromin solution. This would be equivalent to 0.00675 gm. resorcin in 25 c.c. or 0.02700 gm. in 100 c.c. In a duplicate test, 25 c.c. Lavoris required 3.8 c.c. tenth-normal bromin solution equivalent to 0.00697 gm. resorcin or 0.02788 gm. in 100 c.c. Since oil of cinnamon absorbs bromin, 50 c.c. of Lavoris was boiled until very little or no odor of the oil was noted, keeping the volume nearly constant by adding a little water from time to time, and the bromin absorption then taken. In one experiment, 0.36 c.c. of tenth-normal bromin solution was consumed, and in a duplicate no bromin was absorbed. This shows the absence of resorcin.

Residue.—On evaporating 25 c.c. Lavoris on a steam bath and subsequent drying of the residue at 100 C., 0.0455 gm. of residue was obtained. This is equivalent to 0.1820 gm. in 100 c.c.

Saccharin.—Saccharin was detected in the residue and ether-extract of the residue by its intense sweet taste when a little sodium bicarbonate was added to it.

Formaldehyd.—This could be detected by the Jarrison test. The color was not very pronounced and the quantity of formaldehyd was small.

Oil of Cinnamon.—The odor and taste of Lavoris is characteristic of cinnamon.

Menthol and Oil of Cloves.—The odor of menthol and of oil of cloves could not be detected, but no tests were made to demonstrate their presence.

The analysis thus indicates that the Lavoris of today contains no resorcin but does contain a small amount of formaldehyd, a little saccharin, and oil of cinnamon (menthol and oil of cloves could not be detected by the odor, but were not tested for). The analysis showed that the principal constituent of Lavoris is zinc chlorid, of which there is about 0.1 gm. per 100 c.c. (about ⅙ grain to the ounce).

The amount of zinc chlorid given in the published formula, i. e., 1.04, is meaningless because the unit of weight or measure is not given; furthermore the analysis shows that it is inaccurate for any unit of weight that might be assumed from the published figures. Since the amount of the most active medicinal ingredient is both indefinite and inaccurate, the composition of the preparation is essentially secret. Lavoris is indirectly advertised to the public by having included in the package a circular giving a list of diseases for which the preparation was recommended. The combination of zinc chlorid, formaldehyd and oil of cinnamon (assuming the menthol and oil of cloves to be present as flavors) in a mixture is irrational and likely to lead its users to ascribe a false and exaggerated value to the preparation. The name is objectionable in that it does not indicate the composition of the potent ingredients of the mixture, but instead suggests its use as a mouth wash.

From a standpoint of public safety, the most serious objection to Lavoris, however, lies in the many unwarranted therapeutic claims and suggestions. It is generally held that zinc chlorid solutions which possess a strength of from 1 to 200 up to 1 to 500 exercise a weak antiseptic action. The strength of zinc chlorid in Lavoris is approximately 1 to 1,000. The directions for its use recommend that Lavoris should be diluted. A dilution of 1 to 4 is recommended for a variety of mouth conditions while for cystitis irrigations and as a vaginal douche, it is recommended that one tablespoonful be added to a quart of warm water or salt solution. The strength of zinc chlorid in the last suggested dilution would approximate 1 to 64,000. It is evident that no antiseptic action could be expected from such dilutions.

The recommendation that diluted Lavoris be used for the treatment of coryza, nasal catarrh, hay fever, inflamed eyes, hemorrhoids and leucorrhea is objectionable and irrational. Especially dangerous is the recommendation that members of a family exposed to diphtheria or scarlet fever should use Lavoris freely as a preventive. Such recommendations can but give a false sense of security and lead to the neglect of proved methods for preventing the spread of these diseases. Equally unwarranted is the recommendation that in gonorrhea one teaspoonful of Lavoris to eight of warm water be used with a blunt end syringe.

The use of Lavoris as recommended would not only prove valueless in many instances but might lead to serious consequences because really valuable methods of prevention or treatment might be neglected. For these reasons the preparation is in conflict with Rule 6.

The Council declared Lavoris ineligible for New and Nonofficial Remedies.

Correspondence

"SELF-SACRIFICE IN THE WARFARE AGAINST DISEASE"

To the Editor:—On reading the letter of the Surgeon-General of the Navy in THE JOURNAL, October 25, with its account of the eighty-three enlisted sailors who, during the height of the terrible influenza epidemic in Boston, subjected themselves voluntarily and after having the danger fully explained to them, to experimentation with a view of promoting medical research which might help the surgeons in finding a remedy, I feel deeply impressed with the thought that honors should be conferred on these men—at least honorable mention of their names in THE JOURNAL or in some permanent public record. I do not know whether they would be entitled to the Carnegie hero medal, but no one could be more worthy of it. I hope the Surgeon-General can be interested in the matter. He pays a deserved tribute to the surgeons of the navy in this connection and truly calls these men "heroes in the fullest and most beautiful meaning of the word." Of course, the men should be consulted as to the making public of their names, and any who did not wish to be thus mentioned need not be. I am assuming there is no rule in the Navy against such action.

RICHARD DEWEY, M.D., Wauwatosa, Wis.

METABOLISM AND SEX

To the Editor:—A recent editorial (THE JOURNAL, Aug. 23, 1919, p. 612) emphasizes the relationship obtaining between basal metabolism and sexual expression, as evidenced by Miles' account of the diminished sex activities of a group of men on a reduced ration experiment. As Miles intimates these results have been foreshadowed by Riddle. Riddle (Theory of Sex, *Science*, N. S. **46**:19-24 [July 6] 1917; *J. Washington Acad. Sc.* **7**:319, 2, 1917, for references to earlier papers) has revived the metabolic theory of sex through extensive experiments on pigeons in which he has affected the metabolism of the germs (egg yolks) through such measures as reproductive overwork and hybridity, thereby producing abnormal sex ratios, while the dietetic factor has been held constant. (An excess of females is produced by overwork, and an excess of males from wide crosses.) He has further shown that when these sex reversals take place they are quantitative in nature (as measured by sex behavior and gonad size), just as chemical and calorimetric analyses of the ova show quantitative changes in the storage metabolism, coinciding with the severity of the method used to produce the change in sex ratios.

Drummond (*Biochem. J.* **12**:25, 1919) has observed in his feeding experiments that when rats are kept on a diet deficient in water soluble B (vitamin) that the males exhibited a lowered sex activity, and indeed were sexually impotent, the testes showing degeneration. More recently Osborne and Mendel (*J. Biol. Chem.* **38**:223, 1919) have observed that when yeast is given to rats as the only source of protein and water soluble B, the males thus fed, although grown vigorously to adult size, were with very few exceptions sterile.

R. McCarrison (*Indian J. M. Res.* **6**:275 [Jan.] 1919; 550 [April] 1919) has measured the changes in weight of the organs of pigeons on diets adequate except for water soluble B. His results are based on seventy-two control and 168 experimental pigeons, and the data show that the testes lose 93 per cent. of their weight, while the ovaries lose only 69

per cent. In simple inanition when the birds die in twelve days or less, the loss in testes weight is 61 per cent. against 11 per cent. for the ovaries.

The nutritive deficiencies mentioned seem to affect the testes much more than the ovaries.

That the experiments also permit of a metabolic explanation seems evident from Dutcher's recent work: He has been able to alleviate, to a considerable degree, the symptoms of beriberi by therapeutic agents such as thyroid extract, tethelin and pilocarpin, which are known stimulants of metabolism.

It seems highly improbable that water soluble B, per se, is necessary in the formation of reproductive tissue, else we should expect to find it in these organs, but it is lacking. A more likely explanation is that its deficiency results in a level of metabolism insufficient for the differentiation and maintenance of male reproductive tissue, and if this level is sufficiently reduced, also for ovarian tissue.

That a change in metabolism due to internal secretions may convert differentiating ovarian tissue into testicular tissue has been brought out most beautifully by the work of Tandler and Kellar, and of Lillie in their studies on the freemartin, in which the hormones of the male fetus circulate through the female fetus, owing to an anastomosis of the blood vessels. If the juncture occurs later in fetal life, the female exhibits only masculine secondary characteristics and sterile ovaries; if earlier, the ovary itself contains testicular tissue, and it is probable that in cases in which the testicular hormone circulates through the female previous to the development of the ovary, a complete sex reversal may be effected.

But the effect of diet on sex is not restricted to a change in secondary sexual characteristics of the differentiated organisms, for if it is applied properly it can effect a true reversal of sex. As Lusk and others have shown that the ingestion of an abundant diet, and of protein foods in particular, leads to an increase in metabolism (specific dynamic action), we should expect that a change in diet which would yield a higher metabolic rate should also result in an increased production of males; and, indeed, such has been found to be the case in the lower forms of life.

Whitney, and Schull and Ladoff (*J. Exper. Zool.*, series of papers from 1914 on), demonstrated in *Hydatina senta* that it is the diet acting on the grandmother which determines the sex of the grandchildren. A continuous diet of the colorless flagellate, *Polytoma*, causes female grandchildren to be produced; and when an abundant supply of the active green flagellate, *Dunaliella*, is supplied, approximately 95 per cent. of the daughters became male producers. This work has been confirmed on five species of rotifers, and in every case the giving of an optimum food and in greater abundance has yielded similar results.

It may properly be asked at this point why it is, then, that feeding experiments on mammals with this object in view have in some cases yielded apparently positive results, but perhaps even more frequently negative results, so that the effect of nutrition and, in truth, the metabolic theory, have until recently been discredited among scientific men.

In answer to such criticisms it seems well to point out that Nature has protected herself against the effects of sudden change in sex ratio by environmental causes by setting aside an organ (the ovary) which resists any change in its metabolism except by unusual or prolonged pressures. The results in rotifers show that the diet does not affect the sex of the daughter, but only of the ova which are to differentiate and develop in the daughter's ovary. How, then, are we to expect significant changes in the sex ratios of higher forms in which the metabolism is more stabilized through the agency of internal secretions, by performing a feeding experiment lasting only a comparatively short time on, at most, a single generation? Riddle has been successful in the first generation, because his methods attack directly the metabolism of the ovary and the developing ova both previous to and during the chromosomal maturation period; and it is for this reason, in addition to others, that he has been compelled to abandon the chromosome theory as a causal explanation of his results. He considers the sex chromosomes as associated phenomena in the determination of sex, developed possibly for the maintenance of the necessary metabolic levels.

The evidence at present would seem to indicate that the older experiments designed to test the nutritive factor must be repeated in view of our newer knowledge of nutrition relating to the physiologic values of the different amino-acids and the rôles played by the vitamins or food hormones. By approaching the problem in this manner we may possibly hope to explain the varying sex expressions of the different nationalities and the changed sex ratios which seem to follow war.

Victor K. LaMer, A.B., New York.
Research Assistant, Food Chemistry, Columbia University.

"DESENSITIZATION OF PERSONS AGAINST IVY POISONING"

To the Editor:—As additional evidence supporting Dr. Schamberg's desensitization of persons against ivy poisoning (The Journal, Oct. 18, 1919, p. 1213), the following experiment tried on myself may not be without interest: Ever since reaching college age and living in cities, I have been very susceptible to dermatitis by contact with poison ivy plants during country excursions, and once was confined to the house for two weeks.

In 1910, before the outdoor season began, for about two months, twice a day, I took gradually increasing doses of tincture of rhus toxicodendron, starting with one drop and ending with a number now forgotten. I never had enough confidence in the possible immunization to come purposefully in contact with poison ivy, and previous experiences were too unpleasant to risk repeating, if avoidable. However, during that summer in portaging a canoe my bare arms unavoidably came in contact with much foliage of the plant. Contrary to previous experiences, no sign of dermatitis developed. Lack of opportunity for outdoor life prevented me from repeating the experiment in other summers.

One or two laymen of intelligent type have told me that they have seen ingestion of poison ivy leaves effect a cure and immunity from dermatitis venenata.

Dr. Schamberg's term "desensitization" implies that more is known of the mechanism of ivy poisoning than many admit. I am more inclined to think that his treatment increases one's "tolerance," whatever that may be, much as one becomes tolerant to nicotin, caffein, alcohol, or even the sun's rays. Following one attack in a season, I have never experienced a second that same year. When a boy and living mostly in the country with plenty of poison ivy around, I was seemingly immune, though never purposefully handling the plant.

Frequently during the time I was taking tincture of rhus toxicodendron I experienced slight pruritus ani, either as a real effect of the drug, a psychic phenomenon, or just a coincidence.

M. W. Lyon, Jr., M.D., South Bend, Ind.

To the Editor:—The theory of establishing an immunity toward ivy poisoning by giving extractives of the plant internally, as recorded by Dr. J. F. Schamberg (The Journal, Oct. 18, 1919, p. 1213) is not new. Chewing the leaves of poison ivy has long been practiced by laborers (Dakin: *Am. J. M. Sc.* **4**:98, 1829) and others in the belief that it would establish immunity against poisoning; many references are made to it in the literature. Some years ago Williams (*M. World* **20**:482, 1902) advanced the conception of an antitoxin to rhus poisoning by giving the drug. He writes:

> A decoction of the leaves of the plant, say about half a dozen leaves at a dose (or they may be simply chewed and swallowed), will cause an eruption of blebs, or water blisters, which contain an antitoxin that neutralizes the poison in the blood when the serum from them is reabsorbed. One or two doses is usually sufficient. . . . The remedy immunizes against the possibility of future poisoning by the plant.

Ford, as long ago as 1907 (*J. Infect. Dis.* **4**:542, 1907), stated that he had established an immunity to rhus poisoning in guinea-pigs and rabbits by administering small but increasing doses of fluidextract of poison ivy. He found that from ten to twenty times the fatal dose could be given to immunized animals.

However, after long study of the subject I have little faith in any theory of immunity against ivy poisoning. The active substance in poison ivy (and poison sumach) is a brownish-red, liquid, nonvolatile resin, 0.001 mg. of which is sufficient to cause symptoms (Pfaff: *J. Exper. Med.* **2**: 192, 1897). The poison being soluble in alcohol, biologic tests with it may easily be made, the degree of irritation being controlled by variance in concentration and duration of application. The technic is simple and the patient's discomfort trifling. I have applied the purified resin from the poison sumach on one so-called immune, and the individual was poisoned (*Pharm. J.* **83**:563, 1909), though it appeared that the skin of this subject was somewhat less sensitive than mine, my arm having been used as a control.

L. E. WARREN, Chicago.

STANDARDS FOR BLOOD PRESSURE APPARATUS

To the Editor:—In response to requests from several sources, the Aeronautic Instruments Section of the Bureau of Standards is undertaking the establishment of standard tolerances for blood pressure gages. In this connection, we are anxious to obtain the opinion of medical authorities as to what allowable error can be permitted in using these instruments.

It should be remembered that no instrument can be made absolutely accurate, and that even if it could, the personal equation of the user would still be a source of error. Consequently, some definite standard of accuracy should be established to be met by the manufacturer.

The information that the gages should be "as accurate as possible" will be of little assistance to us. What we should like is a statement that an error of a certain number of millimeters of mercury in the reading can be reasonably allowed.

We should appreciate also any general information which your readers can furnish on the subject of blood pressure gages, especially as to the principal difficulties encountered in their use and as to the type of gage which is preferred.

S. W. STRATTON, Washington, D. C.
Director, Bureau of Standards, Department of Commerce.

THE RELATION OF THE NEUROLOGIST TO GROUP DIAGNOSIS

To the Editor:—The ever increasing advances in medical science have placed such a burden of responsibility on the profession that a physician attempting a diagnostic study on his patient, alone and unaided, may well feel appalled and helpless. To overcome this apparent paradox, diagnostic clinics or groups are coming into being whose functions are to relieve the physician of the perplexities associated with cases of a difficult nature. The sick have accepted the idea without equivocation. Physicians will do likewise as soon as they fully appreciate its beneficent influence.

I am, of course, aware that physicians avail themselves of the aid given them by the laboratory and the specialist. This readily serves its purpose in a great many cases when the condition is obvious and interpretation simple. What I have in mind, in particular, is the vast number of patients presenting ill defined, vague clinical states who trudge wearily from specialist to specialist. Each specialist's own narrow point of view is injected into the case, and the relief which these patients seek, and which is their due, is more elusive than ever. Group diagnosis obviates the narrowness and correlates all diagnostic data, so that final correct interpretation is possible. The medical profession will be spared the just censure and mistrust of the patient, and the ever growing crop of cults and quackeries will cease to exist.

What is the relation of the neurologist to group diagnosis? I consider this to be a highly important one from several points of view. As a result of the great war, the prestige of the neurologist has been enhanced immeasurably. His opinion was eagerly sought in the great mass of organic disturbances that were the direct results of injuries, and for that type of disorder, largely functional, and grouped under the misnomer "shell shock." His deductions were obviously of manifest importance, for it was he who had the final decision in hand to which side a certain type belonged. In civil practice, his rôle is no less important, for we are all cognizant of the innumerable conditions that simulate visceral organic diseases, and which, in the final analysis, are caused directly by organic nervous diseases. Group diagnosis will prevent a patient with a tabetic crisis from being operated on needlessly; and this holds true for a large number of nervous affections whose onset and course are characterized by pains largely confined to the visceral organs. Repeated operations for a condition that does not exist will, naturally, be obviated. The neurologist himself, as the result of group study, will avoid the pitfalls that might otherwise cause him to interpret falsely a patient's complaint. He will not dismiss a case as functional, and then, very much to his chargin and humiliation, find that some one else has cured "functional" affection by proper operative procedures.

I realize that I have but briefly touched on the relation of the neurologist to group medicine. It is not the purpose of these notes to thrust unduly into the medical limelight the neurologic specialist. Each member of the diagnostic group has an equally important function to fulfil. His deductions in a given case bear a definite and important relation to the group as a whole. Inferentially, the deductions of the other members of the group either add greater value to his interpretations or repudiate them altogether. The manifest educational value of such an exchange of opinion hardly needs extended comment.

I trust that I have not created the impression that the conception of group diagnosis is largely the product of my own originality. On the contrary, there exist in the profession today forceful pioneers who have within recent years preached this radical innovation. The success of their endeavors is a matter of record. I have merely attempted to emphasize its importance to the medical profession, and to the ill who entrust themselves to their care.

CHARLES ROSENHECK, M.D., New York.
Neurologist, Hospital for Deformities and Joint Diseases, New York Diagnostic Clinics

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COMPARATIVE VALUE OF ACETYLSALICYLIC ACID AND ACETANILID AS ANALGESICS

To the Editor:—There has been some controversy in our county medical society about the depressant effect of acetylsalicylic acid and about giving it for the relief of pain. I have been giving it in preference to acetanilid or antikamnia or any of the acetanilid compounds. I would like to have your opinion on this subject.

A. J. MYNATT, M.D., Lamar, Mo.

ANSWER.—There is no doubt that acetylsalicylic acid has decided analgesic value. As it is more anodyne than sodium salicylate, some of it must be absorbed and act as the undecomposed acetyl compound. The mean toxic dose of acetylsalicylic acid, that is, the dose at which either gastric or auditory disturbance is produced, was found by Hanzlik, in a clinical study, to be 165 grains for males and 120 grains for females, which might be roughly averaged at 140 grains. Depression of the circulation (collapse) or of the nervous system (coma) was not observed with such doses. A fatal case of what perhaps was aspirin poisoning is reported by F. W. Lewis, in which a dose of about 200 grains taken by an influenza patient in the course of six hours, on an empty stomach, was followed by death in two days, the cause of death having been hemorrhage from the small intestine, which was profoundly and extensively inflamed and ulcerated. Vomiting and anemia, rather than primary depression of the circulation or of the nervous system, were the prominent symptoms during life. We must, therefore, conclude that acetylsalicylic acid does not have a marked tendency to

produce depression. Assuming the average analgesic dose of acetylsalicylic acid to be 10 grains (though 5 grains often suffice) and the average dose at which toxicity is usually noted to be 140 grains, the figure 13 (10:140::1:14; 14 — 1 = 13), might represent the therapeutic zone; while 19 might be considered the margin of safety, if 200 grains be the minimal fatal dose of this drug. Of course, this does not take into account the unusual reaction to acetylsalicylic acid, characterized by the appearance, from ten to fifteen minutes after ingestion of 5 or 10 grains of the drug, of edema of the larynx or violent bronchial asthma—almost amounting to asphyxia in some cases—and of urticaria or angioneurotic edema. Though they are uncommon, a considerable number of such cases have been reported. We must conclude that acetylsalicylic acid does not have a tendency to produce depression, and that it is a comparatively safe drug; for, even in those cases of allergy in which alarming symptoms appeared, recovery invariably took place.

This cannot be said of acetanilid, which is a treacherous drug. While as much as 60 grains have been tolerated without ill effect, the same dose has frequently been followed by serious collapse, and in some cases by death. A dose of 10 grains would certainly represent a maximum therapeutic dose, for such amount has repeatedly produced toxic effects and may have contributed to a lethal result (even 5 grains are alleged to have caused death). While the analgesic dose of this drug, which might be placed at 2½ grains, is smaller than that of acetylsalicylic acid, and though acetanilid is therefore four times as powerful an analgesic as acetylsalicylic acid, its therapeutic zone is very much smaller: 3 vs. 13, and its margin of safety is relatively smaller still.

We may conclude, therefore, that the preference of acetylsalicylic acid over acetanilid, for the relief of pain, is well founded.

TREATMENT OF BURNS WITH PARAFFIN FILMS

To the Editor:—Please write me the details of the treatment of burns, by the Ambrine method, particularly as regards its use in a spray. Is a hot air drier essential? Kindly state equipment necessary and usual cost, also where to purchase.

R. M. Wiley, M.D., Salem, Va.

Answer.—The secret proprietary "Ambrine" was found to consist essentially of a plastic form of paraffin with a small amount of a fatty oil and an asphalt-like body (Ambrine and Paraffin Films, The Journal, May 19, 1917, p. 1497). "New and Nonofficial Remedies, 1919," lists two forms of "Paraffin for Films"—"Parresine," which retails for about 75 cents a pound, and "Stanolind Surgical Wax," which is less expensive. The lesions are carefully washed with some antiseptic solution, such as the hypochlorites or chloramin-T. They are then dried by blotting with gauze or by means of a jet of hot air. Meantime, the solid paraffin (or mixture) is heated and cooled to about 50 C. The melted paraffin is applied by means of a fine brush (or sprayed by a specially devised atomizer) directly on the wound and on the adjacent unwounded surface, forming a thin film. (In some cases in which there is much pain, Sollmann and Beiter state that it may be more advisable to substitute a heavy coating of liquid petrolatum for the first paraffin film.) Over this is placed a fine layer of cotton, and it is coated with the paraffin. This in turn is covered with another layer of cotton, followed by a gauze bandage, which may be sealed by paraffin. Subsequently the lesions are cleaned in the same manner and again dressed. Sloughs and dead tissue are removed as found at the daily dressings.

The sprayers may be obtained from Max Wocher and Son Company, Cincinnati, the Abbott Laboratories, Chicago, or the DeVilbiss Manufacturing Company, Cleveland, who can supply current price quotations.

A reprint of certain articles on this general subject, from The Journal, will be sent on receipt of ten cents in stamps.

Mental Test of Sex Offenders.—Mental statistics for the first 900 persons examined by the social service department of the venereal disease division of the Michigan department of health illustrate that a large percentage of sex offenders are subnormal mentally. Of the whole number, 214 were feebleminded and needed institutional care; 538 were feebleminded but needed only supervision; twenty-seven were either insane or epileptic; ninety-four were normal; two were superior adults; in twenty-five cases the diagnosis was not completed.—*Social Hygiene Bull.*, October, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, Nov. 11-12. Sec. Regular Board, Dr. T. J. Stout, Brinkley. Sec. Eclectic Board, Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith.

Connecticut: New Haven, Nov. 11-12. Sec. Regular Board, Dr. Charles A. Tuttle, 196 York St., New Haven. Sec. Homeopathic Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec. Eclectic Board, Dr. James E. Hair, 730 State St., Bridgeport.

Delaware: Dover, Dec. 9-11. Sec. Regular Board, Dr. P. S. Downs, Dover. Sec. Homeopathic Board, Dr. H. W. Howell, 824 Washington St., Wilmington. Pres. Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

Florida: Tampa, Dec. 1-2. Sec., Regular Board, Dr. Wm. M. Rowlett, Citizens' Bank Building, Tampa.

Illinois: Chicago, Dec. 1-3. Mr. F. C. Dodds, Supt. of Registration, Springfield.

Kentucky: Louisville, Dec. 2. Sec., Dr. A. F. McCormack, 532 W. Main St., Louisville.

Louisiana: New Orleans, Dec. 1-3. Sec., Regular Board, Dr. E. W. Mahler, 141 Elk Place, New Orleans.

Louisiana: New Orleans, Nov. 4. Sec. Homeopathic Board, Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

Maine: Portland, Nov. 12-13. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Massachusetts: Boston, Nov. 11-13. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Nebraska: Lincoln, Nov. 12-14. Sec., Dr. H. J. Lehnhoff, 514 First Nat'l Bank Bldg., Lincoln.

Nevada: Carson City, Nov. 3. Sec., Dr. S. L. Lee, Carson City.

Ohio: Columbus, Dec. 2-4. Sec., Dr. H. M. Platter, State House, Columbus.

South Carolina: Columbia, Nov. 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Texas: Galveston, Nov. 18-20. Sec., Dr. M. F. Bettencourt, Mart Texas.

Virginia: Richmond, Dec. 9-12. Sec., Dr. J. W. Preston, 511 McBain Bldg., Roanoke.

Connecticut July Examination

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 8, 1919. The examination covered 7 subjects, and included 70 questions. An average of 75 per cent. was required to pass. One candidate was examined, and passed. Three candidates were licensed on credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
New York Homeo. Med. Coll. and Flower Hosp.		(1916)	78

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
Hahnemann Med. Coll. and Hosp. of Chicago		(1904)	Mass.
Atlantic Medical College		(1909)	Penna.
Boston University		(1906)	New Hamp.

Kentucky July Examination

Dr. A. T. McCormack, secretary of the Kentucky State Board of Health, reports the written examination held at Louisville, July 1-3, 1919. The examination covered 10 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the twenty-five candidates examined, 21 passed and 4 failed. Eight candidates were licensed through reciprocity. One candidate, a graduate of Rush Medical College in 1918, was licensed on presentation of a certificate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Louisville	(1916) 81, (1919) 81, 82, 83, 84, 84, 85, 85, 85, 86, 86, 87, 87, 87.		
University of Michigan		(1917)	91
Meharry Medical College	(1919) 70, 75, 75, 77, 79.		
Vanderbilt University		(1914)	82

College	FAILED	Year Grad.	Per Cent.
Meharry Medical College	(1917) 69, (1918) 57, (1919) 64, 64		

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas		(1918)	Arkansas
College of Physicians and Surgeons, Chicago		(1898)	Illinois
Loyola University, Chicago		(1917)	Illinois
Johns Hopkins University		(1917)	Maryland
University of Cincinnati		(1917)	Ohio
Lincoln Memorial University		(1916)	Tennessee
Universities of Nashville and Tennessee		(1910)	Tennessee
Vanderbilt University		(1916)	Tennessee

Social Medicine, Medical Economics and Miscellany

MEDICAL INSPECTION OF SCHOOLS

Taliaferro Clark, in a discussion on the medical inspection of schools (*Public Health Reports* **34**:2013 [Sept. 5] 1919), outlines the potent advantages and the minimal requirements of an acceptable health supervision of schoolchildren. All endeavors to raise the standard of health of a given community naturally begin with the children. The value of medical inspection lies not only in the detection of remediable defects in the schoolchildren, but much more in the detection of remediable defects in the sanitary conditions with which the children are surrounded—ventilation, lighting, heating, construction of the individual desks, seating capacity of rooms, playgrounds and playground apparatus.

An outline is given of what an effective system of health supervision should provide, namely: (1) thorough sanitation of all buildings used for school purposes; (2) intelligent supervision of classrooms to detect and correct conditions injurious to the health of the pupils as soon as they arise; (3) full-time services of medical inspectors qualified to discharge the sanitary and medical duties of the school physicians; (4) full-time services of school nurses; (5) facilities for dental inspections; (6) provision whereby necessitous children may receive free treatment best suited to their needs, and (7) examination of all children who fail to progress normally in school work.

At times one hears objections made against medical inspection of schools on the ground that it is an interference with the rights of physicians, with the rights of parents; that it is the cause of an unwarranted increase in the tax rate and that it encourages parents in shifting to others responsibilities that they should bear themselves. Dr. Clark shows that the experience of the communities that have given health supervision of schoolchildren a full trial refutes any such charges. Interest in matters of health is greatly increased by the inspection; parents awake to the needs of the situation; the average number of years of instruction required per pupil is lessened owing to the greater efficiency of the pupils, and there is a gain all along the line, which more than compensates for the slight additional expense.

The scope of an effective and efficient medical inspection should include (1) examination for the presence of physical or mental defects which make it inadvisable for certain children to attend school; (2) the measuring and weighing of all children to determine the average physical development by sex and one-year age periods, and the utilization of such standards as an index of nutrition and as a guide to the discovery of harmful causes in the case of children who do not develop normally; (3) the discovery, removal and prevention of defects of dentition, hearing, posture and vision that hamper children in school work and retard their physical and mental development, and (4) aid to the health authorities in the control of communicable diseases.

An acceptable school physician should meet the following minimal requirements: 1. He should devote his full time to the supervision of the health of schoolchildren. 2. He should be skilled in medical diagnosis, and able to advise with and assist the family physician when it is so desired. 3. He should have a knowledge of bacteriology sufficient to enable him to take cultures, detect "carriers," and otherwise assist the health authorities so that it may be unnecessary to close schools during epidemics of communicable diseases. 4. He should be well grounded in the principles of personal and general hygiene, and have the ability to apply them to school purposes. 5. He should be competent to prescribe suitable exercises in individual cases to overcome postural defects, and advise with regard to regulated group exercises designed to promote the best physical development of normal children. 6. He should notify all parents of the presence of physical defects in their children as soon as these defects are discovered, and make reasonable efforts to have his recommendations carried out.

A full-time, specially qualified physician is needed for the work, and 2,000 schoolchildren constitute the average number that can be adequately served by one physician. A card index system with an inspection card for each pupil should be introduced. The pupil should receive a thorough examination on first entering school, and the results should be carefully recorded and filed. The inspection card should be sufficiently large to permit of adding notations from time to time as the pupil passes through the various grades of the school. Comparisons yearly (or more frequently) as to weight and height are valuable as indicative of proper or defective nutrition or of the onset of disease.

STATE CONTROL OF VENEREAL DISEASES IN AUSTRALIA

Australia, which has served the world as an experimental field in social and economic affairs, is developing much advanced medical legislation. The serious attempt it has made at state control of venereal diseases is described by J. H. L. Cumpston, director of quarantine, in Service Publication 17, published recently at Melbourne.

Definite statutes directed at venereal disease control, and embodying the recommendations of a special committee appointed by the government in 1916, have become a part of the law of Tasmania, Queensland and Victoria. Western Australia already had on its law books an act passed in 1915. Legislation had followed rapidly in the three other states to protect the country from a wholesale spread of infection, feared from the discharge from the army of 55,000 men suffering from venereal diseases—comparatively few of whom had been diseased before entering the army, and many of whom would return to country districts, spreading the infection in regions hitherto almost free from it.

Among many detailed provisions of the legislation enacted are these:

1. It is obligatory on persons with venereal diseases to apply at once for treatment, and to continue treatment until given a physician's certificate of cure.
2. A record must be sent by physicians to the central authorities each time a patient appears for treatment. Neither the patient's name nor his address is included in this record of the disease, but must be obtained by the physician, and are forwarded later if the patient stops treatment before he is cured.
3. Notice is then to be served by the government, directing such patients to continue the treatment.
4. All prisoners with venereal disease may be detained in jail until cured.
5. Official examination must be submitted to by any person formally accused by another of having venereal disease.
6. Marriage may be annulled, in one state, if one of the parties to the contract has a venereal disease in an infectious stage and has not informed the other of his condition.
7. For one person to infect another, knowing he has venereal disease, is a serious and punishable offense.
8. Persistence by a diseased person in an intention to marry justifies warning being given by the state to the other party.
9. Proprietary medicines and appliances for the generative organs may not be advertised or sold.
10. It is recognized that free clinics must be established, as well as regular hospitals, for the care of venereal cases, and the central government offers financial assistance to the states on a dollar for dollar basis.

It is not expected that this legislation will result in complete eradication of venereal diseases; but it is expected that it will approach that ideal, and will put an end to great loss of life, insanity, sterility, destruction of family life, inefficiency and economic waste. The object of the legislation is that the disease shall be treated as a disease. All confusion with moral questions is avoided.

Knowledge of the source of infection is felt to be a matter of primary importance in attacking the condition. Investigation indicates that half of the venereal disease in Australia is contracted from women who are not professional prostitutes. It also appears that the disease is five times as prevalent among single as among married men.

About 10,619 notifications of applications for treatment have been received from physicians since the passage of the acts in 1917. This is considered as demonstrating a considerable measure of success, though prediction of ultimate complete success is hardly hazarded, for "in the present state of public opinion it is not possible to attempt the rigid enforcement of the law."

Medicolegal

Cleaning of Surface Closets as Health Measure

(Ratchford v. City of Gastonia et al. (N. C.), 99 S. E. R. 21)

The Supreme Court of North Carolina, in affirming a judgment dissolving an order restraining the selling of a lot for charges for cleaning a surface closet on it and other closets owned by the plaintiff, holds valid the city ordinance under which the city was acting. The ordinance provided that each and every surface closet or privy in the city used in connection with a dwelling should be cleaned and inspected under the supervision of the city, for which a charge of 30 cents a month should be made, to be paid by the owner of the property, a penalty of 50 per cent. to be added in case of nonpayment, the charge to be a lien on the real estate, enforceable in the same manner as the lien for taxes. The court holds that this ordinance was a valid exercise of the power reposed in the town authorities for the protection of the health of the people of the town, and that it was fully authorized by the powers expressly conferred by the provision of the general statute of 1917, in regard to cities and towns, that the governing body, or officer or officers who may be designated for this purpose by the governing body, shall have the power summarily to remove, abate or remedy, or cause to be removed, abated or remedied, everything in the city limits, or within a mile of the limits, which is dangerous or prejudicial to the public health; and the expense of such action shall be paid by the person in default, and, if not paid, be a lien on the land, and be collected as unpaid taxes.

The court says that the town authorities not only have the power to impose such duty on the land for the necessary protection of the health of the citizens, but they would be derelict in their duty as such officials, and in proper cases liable to indictment for failure to protect the health of the public by such necessary regulation. Even if there had not been precedents sustaining such authority, the act of 1917 confers the power, and it may be that the authority would exist, even without the statute, as a necessary inference from the requirement and duty imposed on the town authorities to protect the public health. The enforcement of such regulations as this by an officer appointed by the city, directly through its officers and employees, not only is more economical, but it is the only method of making it efficient.

The necessity of sanitation is fully recognized and is becoming of more and more importance with the knowledge which we obtain of the causes of disease and death. Doubtless the time is not far distant when by statute all manufacturing establishments or industries employing more than a certain number of people will be required to institute sewerage in their tenement houses, even when located outside town limits, in order to protect the health of the employees and of the neighborhood as well. In most towns of any size, surface closets are abolished, and sewerage is required. In view of the advance of medical science and regard for that sanitation which must be universal in order to be at all effective, there must be an extension of the requirements which by experience have been demonstrated as necessary for the protection of the public health.

The public health is a matter of importance to the entire neighborhood, and especially to all the inhabitants of a town or city, for the indifference or ignorance or neglect of one man will nullify the precautions taken by all others in that locality. Such an ordinance as is here in question is a necessary protection, which will be extended in its scope with the increase of knowledge, and can never be diminished. The requirement of sewerage will be better than such an ordinance as this, which is the minimum.

Quarantine for Gonococcus Infection

(Ex parte Johnston (Calif.), 180 Pac. R. 644)

The District Court of Appeal of California, Second District, Division 1, says that, on the petitioner's application therefor, the supreme court issued a writ of habeas corpus returnable to this court after its denial of a similar petition. The writ, no doubt, was granted on the argument that she was not and never had been afflicted with the infection, which, if true, would entitle her to be discharged from custody; but the return to the writ and evidence taken at the hearing conclusively established the fact to the contrary; and she was remanded to custody.

The adoption of measures for the protection of the public health is universally conceded to be a valid exercise of the police power of the state, as to which the legislature is necessarily vested with large discretion, not only in determining what are contagious and infectious diseases, but also in adopting means for preventing the spread thereof. The legislature, having determined the character of the disease in question, imposed on the health department of the city the duty, when having knowledge that one is afflicted therewith, of taking the necessary measures to prevent its spread. In the absence of any showing to the contrary, this court must, on the evidence before it, assume that the petitioner was, when subjected to quarantine regulations, and was yet, afflicted with and suffering from gonococcus infection, which, by Section 2979a of the Political Code, is, with leprosy, smallpox, typhus fever, and a number of other diseases, declared to be contagious and infectious. The sole question thus presented was the right of proper authorities to isolate and place her in quarantine. By the section of the code just cited it is made the duty of the health officer, knowing of the existence of any such contagious or infectious disease, to take such measures as may be necessary to prevent the spread thereof. The isolation of one afflicted with a contagious or infectious disease is a reasonable and proper, indeed, the usual, measure taken to prevent the increase and spread thereof.

It appeared that the petitioner was originally taken into custody without a warrant, and, basing his argument on such arbitrary action, counsel drew a lurid picture of what might result from maladministration of the law by those charged with the duty of enforcing it. But the fact that the authority so delegated may, in a given case, be abused, is no legal reason for denying the power to quarantine summarily in a case in which grounds therefor concededly exist. Possible maladministration of the law was no concern of the petitioner, unless such administration thereof was shown to have affected her. Nor could her arrest without a warrant, after which, and while being illegally held, an examination was made with her consent which disclosed the existence of the infection, avail her in this proceeding. Assuming the action of the police officer arbitrary and unjustified, she was not restrained of her liberty by reason thereof, but on account of a disease with which she was subsequently found to be afflicted, and in the ascertainment of which fact there appeared to have been no arbitrary or unlawful action taken.

There was no merit in the contention that the infection with which the petitioner was afflicted was noncommunicable except by actual contact, which contact in such cases must be predicated on the assumption that an offense cognizable by law would be committed. Assuming that grounds existed for the petitioner's contention, no evidence tending to establish such fact was presented, and it is not a matter as to which the court may take judicial notice.

Counsel cited no authorities in support of the contention that one afflicted with a contagious disease cannot be subjected to quarantine regulations until it is first judicially established by some proceeding in court that he is so afflicted. Manifestly to uphold such contention would render laws for the protection of the public health nugatory.

Society Proceedings

COMING MEETINGS

American Child Hygiene Association, Asheville, N. C., Nov. 11-13.
Southern Medical Association, Asheville, N. C., Nov. 12-13.
Southern Minnesota Medical Assn., Mankato, Dec. 1-2.
Society of American Bacteriologists, Boston, Mass., Dec. 30-31.
Southern Surgical Association, New Orleans, Dec. 16-18.
Western Surgical Association, Kansas City, Dec. 15-16.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Ninth Annual Meeting, held at Harrisburg, Sept. 22-25, 1919

The President, DR. FREDERICK L. VAN SICKLE, Olyphant, in the Chair

Community Sanitation as Based on Knowledge of Camp Sanitation

DR. WILLIAM G. TURNBULL, Cresson: To secure for the communities the results obtained in camp sanitation, there must be centralization of authority; sanitary officers trained by the central health authority—to which body they must be responsible; employment of only licensed health officers—the salary to be sufficient to attract capable men and a pro rata share of such salary to be borne by the central authority, and a comprehensive campaign of health education that the cooperation of the public may be secured—such campaign to begin in the lowest grade of the public schools and to reach all ages and all walks of life.

Work of Sanitary Engineer in Pennsylvania Department of Health

MR. C. A. EMERSON, JR., Chief, Engineering Division: The principal work of the sanitary engineer is included under water supply, sewerage, waste disposal, milk supply and housing. The provision of a pure water supply constitutes the most important element of the work. We have 136 filter plants in Pennsylvania supplying pure water to over 4,000,000 people. Long time storage and filtration are the two well defined methods of water purification. To these may be added the chlorination of water as a protection against pollution. Since 1906 Pennsylvania's death rate from typhoid has dropped from 54.8 per hundred thousand to 10.1, a reduction of 81 per cent.

SYMPOSIUM ON PNEUMONIA AND EMPYEMA

Diagnosis of Pneumonia

DR. THOMAS G. SIMONTON, Pittsburgh: Attention is drawn to the nerves in relation to the lung and to their position in the mediastinum. In a beginning pneumonia or septic peritonitis with irritation of the phrenic nerve, pain may be referred to the tip of the acromion by reason of the fact that the phrenic is the fourth cervical nerve and sends communicating branches to the brachial plexus which, in turn, supplies cutaneous branches to the tip of the acromion. Patients with pneumonia during the influenza epidemic complained of pain, and a sense of constriction in the throat. They exhibited hoarseness, croupy cough, partial or complete aphonia, and in some cases inspiratory dyspnea. These symptoms are attributed to the fact that the free fluid or swollen glands in the mediastinum, or the peribronchial inflammation, caused a recurrent laryngeal or vagus paralysis. Intubation or tracheotomy should be considered early.

Management of Pneumonia, Its Complications and Sequelae

DR. LAWRENCE LITCHFIELD, Pittsburgh: The immediate determination of the invading micro-organism is made necessary by the success of early serum treatment. Pleuritic exudate is to be drained only after aspiration is found to be insufficient; then rib resection is not advisable. Follow-up treatment should be carried out with Carrel's method and caloric feeding. It is important to maintain the water supply of the body by intravenous injection of glucose solution, if other means are inadequate. Attention is called to the efficacy of atropin in beginning pulmonary edema, 1/50 grain every twelve hours, to the danger of feeding during the first days and of using opiates as a routine. Alarming distention of the abdomen may be due to acute gastric dilatation. It may be relieved promptly by the stomach tube. If the distention is in the intestine, pituitary extract is a valuable adjunct to the usual enemas. An almost exhausted organism in pneumonia may be tided over by the free use of caffein and epinephrin. During an epidemic, Dunham's nasopharyngeal disinfection is more dependable than vaccines as thus far established.

Surgical Complications

DR. EVAN W. MEREDITH, Pittsburgh: Empyema occurred in several base hospitals in from 7 to 15 per cent. of all types of cases of pneumonia. Pneumonia secondary to measles, and streptococcic bronchopneumonia gave the highest percentage. The incidence of peritonitis is difficult to determine, but at the necropsy a rather high percentage of bronchopneumonia cases will show involvement of the peritoneum. Suppurative perichondritis of the thyroid cartilage was observed in three patients. Abscesses in the abdominal wall in the suprapubic region were seen in two patients. Arthritis with effusion is a frequent complication. Two patients with encapsulated empyema in the upper part of the pleural cavity were for many weeks suspected of having tuberculosis. Drainage and resection resulted in prompt cure.

Acute Alveolar and Interstitial Emphysema in Influenzal Bronchopneumonia

DR. FRANK F. D. RECKORD, Harrisburg: Of 45,000 men, 14,000 became sufficiently ill with influenza to require hospital treatment. Of these, 2,500 developed pneumonia with a mortality of 800, or 32 per cent. From the first it was evident that death from influenza meant death from lung complications, pneumonia in some form. Bronchiectasis and interstitial emphysema were of rapid development. A striking type of reaction recognized was a condition of acute alveolar emphysema with the deposit of a hyaline fibrinous material on the alveolar walls. It is the one distinctive feature in the pathology of influenzal pneumonias. The patient is virtually blowing bubbles in his own lungs, into a medium of exudation relatively poor in fibrin. The bacteriology of the lungs was mixed in a significant number of cases, but the one organism occurring with greatest constancy was the influenza bacillus.

DISCUSSION

DR. GEORGE R. MOFFITT, Harrisburg: In a number of cases of measles and pneumonia that came to necropsy we did not find the extensive bronchopneumonia described by Lucke. In many of the cases in which death had been sudden we would find from 2 to 3 liters of seropurulent fluid in the pleural cavity, and the lungs were filled with a thick, plastic exudate. This could not be withdrawn by pipets, thus explaining why it was not discovered before death. The necropsies generally showed hemolytic involvement of the lung. In the influenzal pneumonias we found the influenza bacillus in slightly more than 4 per cent. of the cases.

DR. M. HOWARD FUSSELL, Philadelphia: In the matter of referred pain in pneumonia it is to be remembered that many abdomens have been opened with the thought of appendicitis or gallbladder disease. In no case of supposed abdominal disease should an operation be done until after careful examination of the lungs. I agree with Dr. Litchfield that large amounts of water should be given in the pneumonia cases; nothing so reduces the toxemia. Not only is moving air a necessity, but it must be literally fresh air. While I would condemn the routine use of opiates, I consider the giving of a small dose of opium in a selected case preferable to the exhaustion from two sleepless nights. The occurrence of acute gastric dilatation following the crisis in pneumonia is not as well known as it should be.

DR. A. T. LIVINGSTON, Jamestown, N. Y.: No mention has been made of the basic factor underlying pneumonia or

other inflammation, namely, disturbance of the circulation. Inflammation is the result of abnormal dilatation of the capillary system in the affected part. Bacteria cause disease because of stasis in the circulation. Disease will not be present if the circulation is maintained in proper condition. Ergot is the only drug that acts on the abnormally dilated capillaries.

Dr. George E. Holtzapple, York: To surround the patient with plain or medicated steam is an exceedingly valuable procedure in combating the cyanosis following the administration of opium in small dosage.

Diagnosis and Treatment of Congenital Pyloric Stenosis

Dr. Albert F. Hardt, Williamsport, Pa.: The first symptom that attracts attention is vomiting, frequently beginning as a regurgitation which gradually becomes worse until it becomes distinctly projectile in character, the vomit often being projected several feet. It occurs after each feeding or after several retained feedings. There is nothing distinctive about the character of the vomitus. Of all the symptoms, the vomiting is the most alarming. A peristaltic wave appears after food is taken, and radiates from the cardia to the pylorus. A tumor may be felt to the right and above the level of the umbilicus, usually a small movable mass. There are scanty stools and urine and progressive loss of weight. It is now generally agreed that only in the mildest cases with partial retention and with no loss or little loss of weight should expectant treatment be tried. In all other cases, operation should be advised at once.

DISCUSSION

Dr. Levi J. Hammond, Philadelphia: At times the tumor can be felt in the region of the pylorus, though more often the liver, which is invariably enlarged, so covers it over as to prevent its being palpated. The other symptoms are those naturally to be expected and incident on persistent vomiting. As the condition is surgical from the onset medical treatment should not be employed longer than is necessary to establish the diagnosis. Surgical treatment should consist in either pyloroplasty or posterior gastro-enterostomy; the former is indicated when the pathology is demonstrably localized. As this is not in my experience often possible, I have always elected posterior gastro-enterostomy, which I believe will meet the greater number of indications.

Dr. John J. Gilbride, Philadelphia: Congenital stenosis of the pylorus has a fairly definite symptomatology. Having a child with persistent vomiting in the presence of constipation, one might well suspect the presence of a stenosis of the pylorus; and the mere fact that the practitioner suspects such a condition leads him a long way toward making a correct diagnosis. One should be reasonably certain about the diagnosis before recommending operation, as operation on these little patients demands a very careful and painstaking technic in order that their lives shall not be sacrificed needlessly.

Fracture of the Pelvis

Dr. Samuel P. Mengel, Wilkes-Barre: There is no doubt that if roentgen-ray examinations were made as a routine in all doubtful cases, there would be a greater number of fractures of the pelvis, and incidentally, fewer recorded deaths from internal injuries. Fractures involving the crest of the ilium are very rarely complicated. Fractures of the pubes and ischium occur more frequently, are often multiple and complicated, and have a high mortality. Owing to the intensity of the fracturing force, the pelvis is crushed in many cases, with extensive damage to the soft parts. The necessary time requisite for a complete cure in these cases is directly proportionate to the extent of injury and the displacement of the bones. In suspected cases of ruptured bladder, an exploratory laparotomy should be performed as early after the injury as possible.

DISCUSSION

Dr. William L. Estes, South Bethlehem: Fractures of the pelvis occur much oftener than one would suppose. They occur very frequently in industrial establishments. Roentgen-ray examination is very essential to making the diagnosis.

Dr. John B. Roberts, Philadelphia: I was recently called to see a woman, aged 78, who had been knocked down by an automobile. She had a fracture of the face and was violently shocked. She had fracture of both bones of one leg. There was a good deal of contusion showing a blow about the hips. The roentgenogram disclosed a fracture of the pubis on one side.

Pulse Pressure in Traumatic Cerebral Compression

Dr. Harry M. Armitage, Chester: In severe fractures of the base with widespread hemorrhage, the blood pressure symptoms are valueless. In traumatic cerebral compression when the local symptoms suggest a blood clot or a depressed fracture pressing on the brain, as evidenced by the roentgen ray, palpation or paralysis, the general symptoms, such as slowed pulse and blood pressure findings, may be of little value if the medulla is not involved by pressure. Operation is the only rational treatment in these cases. In cases with major symptoms of choked disk, headache, disturbed sensorium, coma, increased pressure of the cerebrospinal fluid and slow pulse, there is also invariably a high pulse pressure. The systolic pressure is too uncertain a factor to be of any value in diagnosing the amount of pressure. Our decision as to whether or not a patient should be trephined should be determined after grave reflection and consideration of the entire group of symptoms; but in all cases of head injury, frequent estimations of the pulse pressure and pulse rate should be made.

DISCUSSION

Dr. Lyndon H. Landon, Pittsburgh: In at least 80 per cent. of cranial cases the surgeon sees there is increased intracranial pressure. I rely very largely on the direct estimation of intracranial pressure by the spinal mercurial manometer. By lumbar puncture the presence or absence of blood is determined. It is important not to postpone decompression until the intracranial pressure reaches 40 or 59 mm. of mercury, until the pulse pressure far exceeds the pulse rate, and all the symptoms of Kocher's third stage have appeared. The time to consider operation is when signs of beginning compression appear.

Dr. Charles H. Frazier, Philadelphia: Decision as to trephining should be determined after grave reflection and consideration of the entire group of symptoms; but in all cases of head injury, frequent estimations of pulse pressure should be made. If one were to rely on rise of blood pressure and choked disk as giving the indications for or against operation, it would be done in many instances in which it should not have been done and would not be done in many instances in which it should have been done. In determining the indications for or against operation, the whole clinical picture must be taken into consideration.

Pennsylvania's Campaign Against Venereal Diseases

Dr. S. Leon Gans, Philadelphia: All means must be utilized to prevent infection. Methods must be employed to locate and detect infected persons. When infection is detected, treatment must be carried out until a cure is accomplished. Under prevention is classed the educational campaign, conducted by organizations which are being formed in every town in the state. These organizations will be composed of responsible men and women, their purpose being to carry education to the individual in his or her town. The block system has been successfully carried out, which brings comprehensive education into each home and deals with broad public health work. These organizations will supervise a system of talks to assemblies of men and women which will be graded as to sex and age and followed by the distribution of carefully prepared pamphlets. It is recommended that a selected course in sex instruction be introduced into schools, and that the parents, the clergy and the family physician be urged to discuss this problem so that the growing child will have a sane sexual education rather than a morbid sensual smattering. All inmates of penal institutions or reformatories are being examined and treated when infected. They will be given instructions concerning

prophylactic measures and the dangers of infection and the spread of venereal diseases. Framed posters will be distributed throughout the state giving information on venereal infection, advising the proper method of securing relief, and warning against quacks.

(To be continued)

KENTUCKY STATE MEDICAL ASSOCIATION

Sixty-Ninth Annual Meeting, held at Ashland, Sept. 22-25, 1919

The President, DR. JOHN G. SOUTH, Frankfort, in the Chair

Surgery of Thyrotoxicosis

DR. L. WALLACE FRANK, Louisville: The operation of thyroidectomy is not without danger, and should be undertaken only by those familiar with the anatomy of this region. Close to the gland lie the great vessels of the neck and also the recurrent laryngeal nerve. It is extremely easy to tear the thin walls or blood vessels of the gland. I saw a case in which even the inferior thyroid was torn close to the jugular. While the toxic thyroid may be a secondary condition, nevertheless, it is the seat of pathology and its removal produces cure or marked improvement.

Epidemiology of Communicable Diseases

DR. IRVIN LINDENBERGER, Louisville: From results obtained thus far with the Rosenow vaccine in influenza, it appears possible to afford protection by prophylactic inoculation of persons against the more serious respiratory complications. The duration of the immunity is not known, but indications are that it is relatively short. As regards vaccine treatment, since the severer complications of influenza, such as pneumonia, do not usually begin until the fourth day or later, the vaccine, if given at the onset of the disease, might reasonably be expected to afford some protection. The initial prophylactic dose daily for one, two or three days, is recommended, provided no unfavorable symptoms occur. The vaccine is harmless, and a certain degree of protection is afforded. Prophylactic inoculation against the respiratory infections, so fatal during the epidemic, should be studied on a large scale by many according to the principles laid down. This endeavor is being made by the Kentucky State Board of Health at the present time. Reports on about 3,000 cases indicate that the vaccine decreases influenza, almost entirely prevents pneumonia and in practically no case in which it was used has death occurred. Inoculations were begun by the health department in Louisville, Dec. 4, 1918, and were continued until Jan. 10, 1919. Investigations made ninety days after the last inoculation show that 750 inoculations were given. One hundred and eighty persons could not be located; four persons contracted influenza after the third inoculation; no cases of pneumonia developed after the third inoculation.

Tendency Toward State Medicine

DR. W. W. ANDERSON, Newport: The state function in medicine began with quarantine in a few diseases. We now have twenty-seven reportable diseases under the Kentucky law. Many of the states provide laboratory tests, antitoxins and vaccines free or at low cost. State care for defectives has advanced to meet the needs of the insane, feebleminded, idiotic, epileptic, blind, deaf, mute and incurable, and to sterilization of the unfit. Hospital service has greatly increased and extended outside in health stations, milk stations, fresh air, farms, community nursing and clinics. Clinics which originated for medical teaching alone have gone into public service, and we have baby clinics, maternity clinics, tuberculosis and venereal clinics. Our national government is greatly extending its activities in public health service and army medical supervision outside the army itself. State medicine is coming and we must prepare for it by, first, emphasizing to ourselves and to the public the high ideal of medicine; secondly, by excellence in present forms of medical work; thirdly, by better average quality of private practice.

Roentgenography in Diagnosis of Tuberculosis

DR. I. H. BROWN, Winchester: Roentgenography affords opportunity for exact diagnosis of pulmonary tuberculosis in its incipiency. Investigation has established beyond any doubt that in the great majority of cases the initial focus is in the hilum which is diagnosed only by means of the roentgen ray.

War Surgery of Bones and Joints as Applied to Civil Practice

DR. ISAAC ARNOLD, Louisville: The factors which contribute to success are: (1) a competent surgeon, who is especially educated in mechanical surgery; (2) asepsis; (3) proper instruments and appliances to do good work; (4) proper equipment; (5) specially trained nurses and assistants; (6) cooperation on the part of the nurses and assistants; (7) absolute control of the patient. All the surgery done on bones and joints in military practice is applicable to civil life, except that the methods may have to be made slightly less radical.

Diagnostic Significance of Vertigo to the General Practitioner

DR. J. D. HEITGER, Louisville: Vertigo may be caused by (1) a lesion in the ear or of the eighth nerve, such as hemorrhage, effusion, labyrinthitis, inflammation of the middle ear producing congestion and irritation of the labyrinth, leukemic infiltrations, trauma, neuritis, low grade specific meningitis, etc.; (2) lesions affecting the intracranial pathways, such as hemorrhage, trauma, tumor, abscess, thrombosis, infarction, tubercle and gumma, multiple sclerosis, syringomyelia, meningitis of various types, poliencephalitis; (3) involvement of the ear mechanism by toxemia from any organ or part of the body, chemical poisoning from alcohol, lead, salicylates, quinin, infectious fevers and focal infections; (4) involvement of the ear mechanism by ocular disturbances or by circulatory disturbances, cardiorenal and cardiovascular conditions. Vertigo involves essentially a study of the vestibular apparatus. It signifies a disturbance of that apparatus.

Early Diagnosis in Diseases of Rectum

DR. BERNARD ASMAN, Louisville: In no part of the body is disease more frequent than in the rectum and anorectal regions, and in no other part of the body is disease more frequently overlooked or longer neglected. The apathy or failure on the part of many physicians to care for rectal diseases properly is not attributable to incompetence, but to negligence and to following blindly a long-established but vicious custom. The great importance of more frequent rectal examinations should be emphasized and urged on each individual member of the medical profession.

Diagnosis of Peripheral Nerve Injuries

DR. B. F. ZIMMERMAN, Louisville: Peripheral nerve lesions are differentiated from lesions of the central nervous system by the history; location of the injury; by the fact that a paralysis of central origin is spastic and not flaccid; that the reflexes are increased, and that the paralysis does not coincide with the distribution of the peripheral nerve. In paralysis of central origin more frequently the entire limb is paralyzed; but if the lesion is in the cord and is small, paralysis may be limited to certain muscles of the extremity. In such a case the paralysis is segmental or of the root type, and does not correspond to any given nerve.

An All-Time Health Officer

DR. J. A. PHELPS, Hickman: The aim of the health officer is the prevention of disease, and to this end he owes it to himself, to the public and to his profession to be the possessor of an intimate knowledge of every community under his supervision. He should be advised promptly of every outbreak of infectious or communicable disease in the county, and when he is so advised he can then make a personal inspection of the surroundings and conditions and remove the cause.

Prostatectomy

DR. J. HUNTER PEAK, Louisville: Prostatectomy is indicated when from any cause the prostate gland becomes suffi-

ciently enlarged to interfere markedly with micturition and endanger the life of the individual from infection of the urinary tract which almost invariably supervenes sooner or later. The only exception to this rule is where prostatic enlargement is due to acute infection which usually subsides under appropriate medical treatment. I have performed about 800 prostatectomies, with only three fatalities, and these followed the suprapubic operation. One patient, 84 years of age, died from the anesthetic and shock. The second patient contracted pneumonia just as he was to be discharged from the hospital. The third patient had a rapidly growing fibrosarcoma. Death occurred eight weeks after the operation from extension of the malignant process.

The Obstructing Prostate

Dr. Carl Lewis Wheeler, Lexington: I suggest the term "obstructing prostate" to supplant the terms "prostatic hypertrophy," "enlarged prostate" and "prostatism." Too many prostates are being removed which are suspiciously malignant, suspicion only being aroused by the postoperative report of the pathologist. It is a well-known fact that carcinomatous areas can be detected in the midst of an adenomatous prostate. In this type of prostate, why should we operate? These patients should be subjected only to radium. I prefer the suprapubic route, and strongly advocate the two-stage operation, the first stage being done under local anesthesia, when it is possible, the second stage under gas and oxygen with as short an anesthesia as will suffice. The interval between first and second stages varies between two and six weeks. Forced feeding is begun at the same time drainage is instituted. In several instances, patients have gained as much as 30 pounds before the time for the second stage has been reached.

Tuberculous Peritonitis

Dr. Charles A. Vance, Lexington: Tuberculous peritonitis is most common between the ages of 20 and 40, and females are affected more than males, owing to the occurrence of tuberculous salpingitis. Tuberculous peritonitis predisposes to abdominal catastrophes by causing adhesions which bind down the intestinal coils. Tuberculous mesenteric glands produce adhesions between the glands and the adjacent coils of intestine, or, by breaking down into abscesses, produce suppurative peritonitis. Tuberculous peritonitis demands internal treatment. Only under special conditions does it require surgical treatment. The treatment is, in general, the same as that for tuberculosis in other parts of the body and consists mainly in rest, proper food, fresh air and general hygienic measures. Tuberculin may be used in seleced cases. The disappearance of the effusion, when it is present, may be hastened by moderate purgation, by restriction of the diet, and by the use of ordinary diuretics. Treatment by the roentgen ray has benefited some patients. Laparotomy is indicated in the cases of serous effusion, if after several weeks of conservative treatment, satisfactory progress has not been made. Other indications for laparotomy are the presence of well-defined and probable primary foci in the tubes or appendix, a localized suppurative process, or the presence of some condition causing partial or complete intestinal obstruction. At operation, the primary focus must be removed, if possible. The abdomen is closed without drainage. The ulcerative types and those without effusion are unsuitable for operation and should not be operated on, except in the presence of definite indications. In the purely adhesive type, operation is almost hopeless. Nitrous oxid-oxygen anesthesia should be used in all tuberculous cases as a precaution against lighting up or aggravating pulmonary lesions, which is a real danger if ether is used.

Fractures of Cervical Vertebrae

Dr. F. P. Strickler, Jr., Louisville: Fractures of the cervical vertebrae constitute from 25 to 36 per cent. of all spinal fractures, and occur most frequently in the male of middle age. Several vertebrae may be fractured and dislocated at one time, but the parts most frequently involved are the body. When this is the case the fracture is usually accompanied by dislocation and compression which produce a rather sharp kyphosis. The spinous and transverse processes are also frequently the site of fracture, but in fractures of this nature there may not be much deformity. The site of these fractures, fracture dislocations and compression fractures is in the larger number of cases found in the lower cervical vertebrae. The nerve symptoms found in fracture and dislocation of the cervical vertebrae are produced by contusion or crushing of the cord at the time of injury, or by persistent compression of the cord by fragments of bone, effusions, blood clots, and later on by callus or the products of inflammatory changes.

If few or no cord symptoms are manifested, either the conservative or operative treatment may be employed, depending on which form of treatment will give the best results in the individual case. The conservative treatment is carried out by immobilizing the spine in plaster-of-Paris jackets, the Calot jacket being the type most frequently used in fractures of the cervical region. If the operative treatment is decided on, one of two operations may be used—the Albee or the Hibbs. The prognosis is guarded. In those cases in which there are marked cord lesions it is very grave, for few, if any, of these patients show improvement. The case usually terminates in death.

Diagnosis and Treatment of Cerebrospinal Meningitis

Dr. E. B. Bradley, Lexington: It is highly desirable to recognize the disease early—if possible before meningitis develops. This may be done by a combination of clinical and laboratory findings. If the spinal fluid is negative at first, a second puncture two hours later may show organisms. Repeated punctures should be made, if necessary, and every method used to cultivate the organism from the blood. Treatment with large doses of antimeningitis serum intravenously should be used as early as possible, combined, when meningitis is present, with intraspinal injection. This treatment lowers the mortality of the severe cases from about 66 to 17 per cent., and in those cases in which the diagnosis is made late the mortality is reduced from 42 to 19 per cent. Complications are also greatly reduced.

Early Diagnosis of Valvular Heart Disease

Dr. C. W. Dowden, Louisville: For the diagnosis of mitral stenosis, a presystolic or diastolic murmur must be present, and this can be intensified and detected much earlier by the use of the amyl nitrite test. Disease of the aortic valve can best be detected with the patient in a bent forward position, after exercise, and with the examiner's ear over the chest. For the diagnosis of mitral regurgitation, in addition to the murmur, cardiac hypertrophy, or a history of rheumatism, is necessary.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held in Indianapolis, Sept. 26-27, 1919

(Concluded from p. 1309)

Blood Sugar in Cancer

Dr. Scott Edwards, Indianapolis: Normal blood sugar varies from 0.07 to 0.14 per cent., with an average of 0.10 + per cent. The curve in a normal individual generally reaches its peak near the forty-five minute interval and is well back to normal or entirely so at the end of two hours. In contrast to the normal curve, the cancer curve reaches approximately 200 gm. per hundred c.c., and at the two hour interval, after the glucose is ingested, the blood sugar is approximately the same figure or it may be considerably higher. The normal is reached in from three to four hours. The curve in all other diseases examined, except one, followed the general contour of the normal curve. In one case, which was later diagnosed as pernicious anemia, the curve was typically that encountered in cancer. I feel, therefore, that while blood sugar tolerance determination offers some diagnostic evidence, it is of greater value as a method of eliminating cancer than in proving its existence. A failure to establish such a curve is strong evidence against malignancy.

Lipovaccines

DR. A. PARKER HITCHENS, Indianapolis: In the military emergency the lipovaccines were valuable because of the difference between a single dose vaccine and one which required ten days to administer; but in civil practice, especially in the prophylaxis against the complicating infections of influenza, I would prefer at the present time to use saline vaccines. I do, however, prefer typhoid lipovaccine because I believe its value has been demonstrated thoroughly.

DISCUSSION ON PAPERS OF DRS. EDWARDS AND HITCHENS

DR. H. K. LANGDON, Indianapolis: The question of sugar tolerance must not be a question of theory, but of fact; and if this curve proves constant and is demonstrable in the early stages of malignancy it will be of untold value. The true value of lipovaccine will be determined only by the test of time.

DR. THOMAS C. KENNEDY, Indianapolis: What we need most of all in cancer is early diagnosis, and I hope that Dr. Edwards will continue his work and report if he finds anything of value.

Some Fractures of the Pelvis

DR. CHARLES HAYWOOD, Elkhart: In the treatment of fracture of the pelvis, the first thought is reduction of the fragments and means for holding them in apposition. Violent manipulations must be avoided because of their tendency to increase shock as well as the extent of the visceral injury. Careful manipulation of the limb is often necessary to assist in digital manipulations through the rectum or vagina. In fractures of the crest of the ilium, supporting sand bags are all that is necessary, and are preferable to bandaging. In fracture of the pubes and rami of the ischium a cast is sometimes employed, but the same result can be accomplished better by adhesive strips. In wide separation of the fragments, resort may be had to wiring. Fracture of the acetabulum and penetration by the head of the femur will require traction laterally and probably the Beck extension. In all these cases the ingenuity of the surgeon is called into play in order to employ the proper means of immobilization and to make the patient comfortable.

Relative Merits of Surgery, Radium and Roentgen Ray in the Treatment of Uterine Fibroids

DR. E. E. PADGETT, Indianapolis: The cases of uterine fibroid to be treated by means other than surgery are a very small minority, being only those cases that are unfit for surgery.

Chronic Uterine Infections

DR. WALTER H. BAKER, South Bend: Surgery of the female pelvis could be undertaken in these cases with much more confidence, and would ultimately be much more successful, if we knew better all of the physiology and pathology of the internal secretions of the ovary and the relation they bear to other internal secretions. A few observers have argued that the tubes and uterus play a part in the internal secretion of the ovary, that without them the ovarian secretion did not functionate properly and a vasomotor complex would arise. Undoubtedly the internal secretion from the ovary persists for many years after the reproductive function has subsided.

DISCUSSION ON PAPERS OF DRS. HAYWOOD, PADGETT AND BAKER

DR. THOMAS C. KENNEDY, Indianapolis: Workers with radium have been convinced of its efficacy in the treatment of fibroids, and I believe that it will only be a short time until the most skeptical will be convinced that it is the treatment of choice in a large number of cases of uterine fibroids. Of course, it must be used with care, but it is readily controllable in skilled hands.

DR. EDMUND D. CLARK, Indianapolis: I believe there is a middle ground in this question. I do not by any means believe that all fibroids should be treated by radium or the roentgen ray, nor do I believe that they should all be treated by surgery. Of course, pyosalpinx, appendicitis and gallbladder disease should be eliminated; we should simply treat fibroids by radium or roentgen ray, and the treatment should be limited to small fibroids. Large tumors should be removed. The conservative surgeon is the man who operates quickly when his diagnosis convinces him that surgical work is necessary.

DR. J. R. EASTMAN, Indianapolis: I am sure we conserve life when we take out an infected appendix promptly on making the diagnosis.

DR. H. K. BONN, Indianapolis: We must beware of a false conservatism. In the surgery of the female pelvic organs we should have less so-called "conservative" surgery and more complete work.

DR. A. M. COLE, Indianapolis: The treatment of uterine fibroids by the roentgen ray has passed the experimental stage, and this method must take its place as a legitimate and highly efficient therapeutic agent in these cases.

DR. O. G. PFAFF, Indianapolis: Small fibroids (the class in which the use of roentgen ray or radium is recommended) can be removed surgically at one sitting under gas anesthesia with very little discomfort and almost without mortality. Large tumors should not be subjected to roentgen ray or radium treatment. As to the appendix, we shall save the greatest number of lives if we operate in every case as soon as the diagnosis is made if the patient can stand an anesthetic. The earlier the better.

DR. H. O. PANTZER, Indianapolis: These divergent views emphasize the fact that we have not yet such scientific data as will enable us to do in every instance what is satisfactory for the patient in making differential diagnoses and seeking or finding the proper remedy. I myself feel that we have reason to antagonize the free, invariable use of radium and the roentgen ray for fibroids, considering the extremely low mortality of surgery in these cases.

DR. W. D. GATCH, Indianapolis: In regard to the mortality of the operation for fibroid, it seems to me there are two factors beyond our control which are bound to cause a considerable mortality. These are possible sepsis in degenerated submucous fibroids, and embolism. Under the best of conditions the mortality from embolism will be from 2 to 5 per cent. We can cure most of these patients by roentgen ray or radium.

Hour-Glass Bladder

DR. H. K. BONN, Indianapolis: This case was an apparently true "hour-glass" bladder, the two compartments connecting with one another by means of a ringlike opening which admitted only the index finger. The anterior septum of this ring was divided in one plane and then resutured in the plane opposite to that of division. Four fingers could now be passed from one vesical cavity into the other. The patient, a man aged 62, made an uneventful recovery and remains free from symptoms.

Renal Tuberculosis

DR. P. E. MCCOWN, Indianapolis: Early diagnosis is most important in renal tuberculosis, and early nephrectomy is indicated. A large incision will be of great help in exposing the kidney and getting to its pedicle; it will save time and save maceration of the kidney and wound contamination. It seems best to divide the ureter first, permitting greater access to renal vessels. The vessels should be well cleaned of adhesions to insure secure ligation. Single thread ligatures, repeated if desired, are less likely to slip than double threads.

Prostatectomy

DRS. W. N. WISHARD AND H. G. HAMER, Indianapolis: Of 120 patients, the oldest was 84 and the youngest 45 years of age. Symptoms at time of consultation were frequency and difficulty of urination in fifty-five cases; frequency, difficulty and pain in thirty-seven cases; marked hematuria in three cases, and complete retention in fourteen cases. Forty-eight of these patients had used a catheter prior to consultation. All patients were operated on by the suprapubic method; eighty-seven by the two stage method; the average interval between the preliminary cystotomy and the enucleation was two or three weeks.

Postoperative results were. There was residual urine, from ½ ounce to 3½ ounces, in ten cases. One patient had 6 or 7 ounces and a recurrence of hypertrophy in the subcervical

prostatic glands which are being destroyed by fulguration. The other patients have good emptying power and good control, except one who has some incontinence, probably resulting from a spinal lesion. The mortality from the operation was 1.66⅔ per cent.

DISCUSSION ON PAPERS OF DRS. BONN, MCCOWN, WISHARD AND HAMER

DR. WILLIAM S. EHRICH, Evansville: Thorough preparation is a very important, if not the most important, element for the success of prostatic surgery.

DR. FRANK H. JETT, Terre Haute: The reason appendicitis patients do better than gallbladder or prostatic patients is that they have been taught that they need operation and need it at once.

DR. J. C. FLEMING, Elkhart: The fatalities following prostatectomy may be divided into three classes: cases of malignancy, cases in which there is excessive hemorrhage, and cases that are not allowed to clear up entirely after their preliminary drainage.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

October, 1919, **158**, No. 4

*Cardiac Phase of War Neuroses. A. E. Cohn, New York.—p. 453.
*Long Duration of Remission in Pernicious Anemia. C. G. Stockton, Buffalo.—p. 471.
*Meningococcus Arthritis. W. W. Herrick and G. M. Parkhurst, New York.—p. 473.
*Ascending Renal Tuberculosis. L. Buerger, New York.—p. 482.
*Effects of Injection of Atropin on Pulse Rate, Blood Pressure and Basal Metabolism in Cases of "Effort Syndrome." C. C. Sturgis, Pendleton, Ore.; J. T. Wearn, Charlotte, N. C., and E. H. Tompkins, Cambridge, Mass.—p. 496.
*Points of Differential Diagnostic Value in Pulmonary Abscess, Bronchiectasis and Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 502.
*Imminent Psychology: A Prophecy and a Plea. J. Collins, New York.—p. 510.
*Bronchiectasis: Its Differentiation from Pulmonary Tuberculosis. B. Stivelman, Bedford Hills, N. Y.—p. 416.
Case of Enlarged Thymus; Status Lymphaticus. R. C. Newton, Montclair, N. J.—p. 534.
*Transitional Leukocytosis and Its Diagnostic Value in Chronic Appendicitis. G. A. Friedman, New York.—p. 545.
*Case of Mediastinal Hodgkin's Granuloma, with Perforation of Chest Wall. M. W. Lyon, Jr., South Bend, Ind.—p. 557.
*Blood Volume in Wound Hemorrhage and Shock. R. I. Lee, Cambridge, Mass.—p. 570.
*Cytologic Studies of Pleural Exudates Complicating Influenza. B. Lucke, Philadelphia, and R. Barker, St. Louis.—p. 577.

Cardiac Phase of War Neuroses.—The special purpose of Cohn's paper is to point out milestones in the history of this subject. Da Costa first defined it in 1871. On the basis of his work the study continued in this war. In his view the disorder arose most often as the result of infectious diseases, was most likely a functional disorder, going on to organic change in the heart, and was certainly affected beneficially by drugs. The symptoms which he described, and which are now recognized are alike. At present it is believed that no matter what the predisposing cause, whether it be infectious disease, malfunctioning glands of internal secretion or gas poisoning, the disorder is essentially a neurosis, depending on anxiety and fear; that it is removed by the disappearance of the exciting cause and that it is cured by measures designed to influence the neurotic state.

Long Duration of Remission in Pernicious Anemia.—Stockton saw his patient for the first time in 1899. It was in all respects a typical case of pernicious anemia. There was an irregular improvement for six years, at which time, although there was a moderate anemia, the blood lost all characteristics of the pernicious type. In 1907 no abnormal cells were found. The blood was in every way satisfactory. In 1918, there was a sharp recurrence which soon became threatening. The patient failed to respond to the action of atoxyl and sodium cacodylate, which drugs formerly had appeared to be of benefit. A transfusion led to temporary improvement. Three weeks afterward the patient developed lobar pneumonia and died three days later, nearly twenty years after the recognition of her first attack of pernicious anemia. In this case there was disappearance of all evidence of the disease, except a continuance of achylia gastrica. Stockton says he had never found an exception to the rule of the presence, sooner or later, of achylia gastrica.

Meningococcus Arthritis.—A study of an epidemic of 321 cases of meningococcus infection impressed Herrick and Parkhurst with the frequency of arthritis, with the variety of its manifestations and with the clinical profit of a separation of these arthritides into different forms or types. The result of their studies has been the classification of these varieties of arthritis met with in meningococcus infections. The authors classify this arthritis in three forms. Type A is an acute polyarthritis that is frequently the initial symptom, more often one of a number of symptoms of onset, and that does not, except in rare cases, appear later than the third day of the disease. This type is a feature of many of the cases of severe infections and is usually a harbinger of a stormy course. Almost all these patients have profuse hemorrhagic rashes coincident with the polyarthritis. In many, but not in all instances, the arthritis is as transitory as the rash. It would seem that these early joint symptoms are due to hemorrhage into the articular and periarticular structures, especially the synovial membrane that they are identical with the hemorrhagic lesions of the skin and serous membranes. The clinical picture is not unlike that of acute rheumatic polyarthritis. In Type B the onset is late, usually about the fifth day. With few exceptions only one joint is affected, generally the knee, occasionally the ankle, hip, shoulder, wrist or elbow. Effusion is a prominent feature, so that aspiration of the synovial capsule is suggested in many cases. Swelling is great, but redness, pain, tenderness and limitation of motion are suprisingly slight. In no other acute arthritis is there this striking disproportion between the swelling and the other inflammatory signs. The duration of the process is usually from one to four weeks, recovery being gradual, but complete. Type C is the well known serum arthritis.

Ascending Renal Tuberculosis.—Buerger gives what he regards as clinical and pathologic proof of the occurrence of cases of ascending renal tuberculosis, ascending at least in the sense that the renal and ureteral lesions are secondary to the bladder involvement.

Atropin in Effort Syndrome.—In cases of "irritable heart" studied by Sturgis, Wearn and Tompkins and in normal men after injection of atropin sulphate there was generally a preliminary drop followed by an increase in pulse rate. This increase was greater on the average in the "irritable heart" cases than in the normal controls. There was also a drop in pulse pressure in the majority of the subjects, dependent on a rise in diastolic blood pressure in the majority of cases and on an additional drop in systolic blood pressure in some of the cases. There was no increase in basal metabolism after the subcutaneous injection of atropin sulphate. There was a slight fall in the basal metabolism in three of the six cases studied. There was always a slight drop in the respiratory quotient.

Differentiation of Pulmonary Abscess, Bronchiectasis and Tuberculosis.—Pottenger states that a history of persistent expectoration of moderate or large quantities of sputum, with a diminished respiratory excursion on one side of the chest and an absence or paucity of crepitations or mucous râles on auscultation over the side affected should make one think of pulmonary abscess or bronchiectasis. Ronchi are often present but they, too, may be absent.

Imminent Psychology.—Collins predicts a glorious future for psychology, in fact all transactions will be placed on a psychologic basis: work, occupation, recreation; the spiritual, physical, social, financial, hygienic betterment of mankind; admission to schools, colleges and universities; choice

of profession, occupation or career; promotion or advancement in any intellectual field will be determined by psychologic examination of the individual seeking position and preferment. Medicine will be quickened, revived and enriched by doing teamwork with the science of psychology.

Diagnosis of Bronchiectasis.—Stivelman emphasizes that a diagnosis of bronchiectasis may be arrived at only after a careful history of the case has been taken and painstaking repeated physical examinations have been made. Given a patient with a history of cough and profuse expectoration of many years' duration following pneumonia, yet well nourished, leading a moderately active life, especially when no history of such constitutional symptoms as tachycardia, chills, fever and sweats can be obtained, and the abundant sputum after repeated and careful examinations does not show the presence of tubercle bacilli, it is most probable that the disease in question is not tuberculous in character, although hemoptysis may have occurred. When this is supplemented by repeated physical explorations of the chest, which show that the lesion is to be found exclusively at either or both lower lobes and that the apices are free from disease, a diagnosis of bronchiectasis may be justifiable. Guinea-pig inoculation of the sputum in question may rule out tuberculosis. Roentgenoscopy and at times bronchoscopy may be of assistance. Tuberculosis complement fixation is not as yet reliable. Extensive basal tuberculosis is most frequently a terminal condition and is associated with bilateral upper lobe involvement and marked constitutional symptoms of toxemia.

Leukocytosis in Chronic Appendicitis.—Transitional leukocytosis or an increase in large mononuclears and in transitional leukocytes, or an increase in either of them was found by Friedman in the blood of 87 per cent. of patients in whom evidence of chronic appendicitis was obtained. There was no transitional leukocytosis in the blood of patients in whom evidence of chronic peptic ulcer was obtained or in the blood of those in whom cholecystitis, renal stones or other organic abdominal conditions were found at operation. A transitional leukocytosis was found in patients in whom appendicitis was present, with other organic abdominal conditions. A hyperleukocytosis and a polynuclear leukocytosis are not as frequently found in chronic appendicitis as is a transitional leukocytosis. A transitional leukocytosis as a diagnostic aid of chronic appendicitis, Friedman says, is superior to roentgen signs which are supposed directly or indirectly to point to a diseased apendix. Transitional leukocytosis often persists in the blood after an appendectomy is performed.

Mediastinal Hodgkin's Granuloma.—A case of neoplastic growth having the tissue characteristics of Hodgkin's granuloma situated primarily in the mediastinym is described by Lyon. It occurred in a young adult, white, male, of good previous and family histories. Its duration was sixteen months. The neoplastic mass caused pressure erosion of the chest wall; the right pleura became infected and a retropleural and retroperitoneal abscess developed, the patient dying of toxemia and exhaustion. The chief pathologic findings were extension of the mediastinal neoplastic growth into the right lung, involvement of the bronchial and mediastinal lymph nodes, of many abdominal lymph nodes and of the retroperitoneal and inguinal nodes. Metastatic growths were found in the unenlarged spleen, in the tail of the pancreas, in the right kidney and in the epicardium and of the pancreas, in the right kidney and in the epicardium and beginning to invade the myocardium. The liver and the cervical, maxillary and axillary lymph nodes were uninvolved.

Blood Volume in Wound Hemorrhage and Shock.—The observations reported by Lee seem to indicate the importance of blood volume in wound hemorrhage and shock. Profound disturbances of blood volume are always serious, and if maintained for any considerable period are usually associated with death. Blood volume can be estimated easily and roughly by comparative readings of the hemoglobin percentage before and after the intravenous infusion of a known amount of fluid. The milder cases of wound hemorrhage and shock require only an increase in blood volume. The severer cases require both an increase in blood volume and an increase in oxygen carrying constituent. This double requirement is met in part by transfusion. However, when transfusion is indicated it is usually desirable still further to increase the blood volume, which may be accomplished in various ways. Continued observations on blood volume give, furthermore, valuable information as to prognosis. A general study of blood volume strongly suggests certain procedures which may be utilized for the prevention and control of the associated symptom complex known as wound hemorrhage and shock.

Exudates Complicating Influenza.—The pleural fluids of seventeen cases of influenzal pneumonitis occurring in previously healthy individuals, were examined by Luke and Barker. The cells encountered were: polymorphonuclear leukocytes, large and small lymphocytes and so-called transitional cells slightly larger than the leukocytes and having a single indented nucleus. Besides these there occurred considerably larger, oval or round mononuclear cells measuring from 10 to 20 microns and possessing a large, usually deep staining nucleus, with several prominent nucleoli and pale staining cloudy protoplasm. Their cytoplasm frequently shows numerous small vacuoles, probably evidences of degeneration. In ten of the seventeen cases examined endothelial cells constituted over 40 per cent. of the total number. In five of these cases they even formed over 70 per cent. of the cells present. These endothelial cells are slightly phagocytic for erythrocytes and occasionally engulf bacteria.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

October, 1919, **80**, No. 502

*Cystic Teratoma of Ovary, with Carcinoma. A. B. Spalding, San Francisco.—p. 401.
Resection of Middle Portion of Cervix for Hypertrophic Elongation of Cervix Uteri. Shortening of Uterosacral Ligaments through Vagina. G. H. Noble, Atlanta, Ga.—p. 409.
*Are the Operative Procedures Done for Dysmenorrhea and Sterility Justifiable? F. C. Holden, New York.—p. 415.
*Work of Omaha Detention Home for Women. P. Findley, Omaha.—p. 421.
Pseudomyxoma Peritonei. J. E. King, Buffalo, N. Y.—p. 426.
Rupture of Deep Epigastric Artery as a Clinical Entity; Analysis of Case. E. A. Schumann, Philadelphia.—p. 432.
Delivery by Natural Passages Following Cesarean Section. J. T. Williams, Boston.—p. 435.
Can Labor be Facilitated by a Specific Diet of the Mother During Pregnancy? H. Ehrenfest, St. Louis.—p. 441.
Specialty of Obstetrics. Present Status, Possibilities and Importance. H. P. Newman, San Diego.—p. 464.
Use of Very Small Dosages of Pituitary Extract in Inducing Labor at Term in Combination with Nitrous Oxid Anesthesia to Alleviate Labor Pains. A. Stein, New York.—p. 470.

Carcinoma of Ovary.—Spalding reports a case of carcinoma of the ovary arising from the epithelial lining of a cystic teratoma. The tumor was noted some days after operation following laboratory examination. The patient reports every six months for examination. Two years have elapsed since the teratoma was removed and there is no sign of recurrence.

Sterility and Dysmenorrhea.—After careful consideration of a series of cases, several of which are cited, Holden believes that further experience with endocrines will tend to clarify our present position in regard to the treatment of dysmenorrhea and sterility. Operative procedures alone give a small percentage of successes and sometimes add a troublesome pathologic condition of the genital organs to the symptoms of dysmenorrhea and sterility.

Omaha Detention Home for Women.—About one year ago this institution was opened and Findley makes a report on the work. Of a total of 275 women admitted to the institution all but eight were gonorrheic, 70 per cent., were also syphilitic though only one in ten showed any clinical evidence of syphilis. The complement fixation test for gonorrhea was of no practical value. In only 30 per cent. of the cases, which ultimately revealed the gonococcus, was the organism found in the first examination and in isolated cases the gonococcus was not revealed until the eighth, tenth and in one instance the fifteenth successive daily examination. In

only 2 per cent. did the tubes reveal any evidence of infection in the clinical examinations. More than half the women were drug addicts and all were social derelicts. As a moral problem, Findley says, the work was most discouraging. He doubts that the public is as yet ready for this reform movement. Public sentiment is as yet not crystallized, but much has been accomplished in educating the public and there is no doubt that the U. S. P. H. Service will perform an inestimable service in continuing the propaganda that has been so effectively pursued in the past year.

Boston Medical and Surgical Journal

Oct. 16, 1919, **181**, No. 16

Work of Red Cross Organizations in Relation to Preventive Medicine of Future. A. Newsholme, London, England.—p. 473.
*Treatment of Carcinoma of Skin with Radium. Results in Cases Treated at Collis P. Huntington Memorial Hospital. C. C. Simmons, Boston.—p. 477.
Loss of Sight from Retrobulbar Neuritis Due to Posterior Accessory Sinus Diseases. Report of Seventeen Cases. L. E. White, Boston. —p. 483.

Treatment of Carcinoma of Skin with Radium.—The statistics analyzed by Simmons show that in 72.5 per cent. of the cases of carcinoma of the skin suitable for radium treatment an immediate cure is to be expected, and of these 90 per cent. will remain free from the disease or if a recurrence does take place, it will yield readily to further light treatment. It is maintained, however, that in cases of epidermoid carcinoma in which the growth can be removed easily without marked resulting deformity, or cases in which metastases are likely to occur, operation is the treatment of choice. Of the twenty-eight patients treated by operation, twenty-six were alive and free from recurrence one or more years later. Ten of these cases were of carcinoma about the orbit so extensive that removal of the orbital contents, together with the lids, was considered advisable. Nine of these patients are still free from recurrence. Five were operated on as radium failed to destroy the disease.

Colorado Medicine, Denver

October, 1919, **16**, No. 10

Little Learning—and the Rocky Mountain News. C. S. Bluemel, Denver.—p. 239.
Progress and Problems in Medicine. F. H. McNaught, Denver.—p. 240.
Tuberculosis in Children. G. H. Cattermole, Boulder.—p. 244.
*Von Pirquet Test and Results of Its Use. E. Friedman, Denver. —p. 246.

Results from Use of Von Pirquet Test.—Friedman has performed the von Pirquet test 525 times on 464 unselected patients ranging in age from a few months to 18 years. Nearly all the children tested were of Jewish parentage, living under conditions comparable with those prevailing among the poorer working classes of the larger cities. Most of the children were of tuberculous parents, many of whom had been inmates of a sanatorium where they had had thoroughly inculcated rules of prophylaxis, which were observed scrupulously in many of the homes. Of the 465 children tested, 39.8 per cent. reacted positively, the number of positives among the males being 2 per cent. in excess of those in the females. Under 1 year, almost 12 per cent. reacted positively; from 10 to 14 years, 55 per cent., and from 14 to 18 years, only 51 per cent. reacted positively. The highest number of positive reactions was noted during the eleventh to thirteenth year period, with 66.7 per cent.; and the lowest at the fifth and the sixth year period, with only 13 per cent. positive. Of the 274 children having a tuberculous parent 53.6 per cent. reacted positively; of the 181 not exposed in this wise, only 23.2 per cent., or less than half reacted. Of the nonexposed, 135 were born in Colorado, and only 20.7 per cent. reacted positively, as compared with 25 per cent. of the boys. Of the 126 children born in Colorado and exposed to tuberculosis, 56.4 per cent. of the girls and 42.3 per cent. of the boys reacted positively. Of 189 children exposed to a parent with open tuberculosis, 58 per cent. reacted positively; of seventy-eight exposed to a closed case, 38.5 per cent. reacted; whereas, nonexposed children reacted only to the extent of 23.2 per cent. Of those children whose father harbored closed tuberculosis, only 27.6 per cent. reacted positively; and when exposed to a mother with closed tuberculosis almost double the number, or 48.4 per cent., showed positive reactions. An observation deserving recognition is, that of the female children exposed to a father with closed tuberculosis, 40.7 per cent. become infected; whereas of the male offspring similarly exposed, only 10 per cent. or less than one fourth react positively. On the other hand, boys and girls exposed to either parent with open tuberculosis react in about equal ratio; eight children had both parents tuberculous, and seven reacted positively. Tuberculous infection is said to exercise a retarding influence on the physical growth of the child. Friedman found that of children reacting positively, 61.8 per cent. are below normal in development, 20 per cent. are normal, and 19.5 per cent. are above normal. Of those with negative reactions, 56.1 per cent. are below normal, 31 per cent. are normal, and 12.6 per cent. are above normal. Infected children under 7 years of age show relatively less developmental impairment than do those above the age.

Endocrinology, Los Angeles

July-September, 1919, **3**, No. 3

Functions of Suprarenal Glands as Revealed by Clinical and Pathologic Studies on Human Beings and by Experiments on Animals. L. F. Barker, Baltimore.—p. 253.
*Fetal and Maternal Athyrosis. II. G. E. Smith, London, Canada. —p. 262.
*Diabetes in Infancy and Childhood. I. A. Abt, Chicago.—p. 273.
*Function of Thymus. E. Uhlenhuth, New York.—p. 285.
*Effect of Splenectomy on Thymus. F. C. Mann, Rochester, Minn.— —p. 299.
Functions of Internal Secretion of Placenta; A Review. F. S. Hammett, Philadelphia.—p. 307.
*Influence of Thyroid On Formation of Antibodies. J. Koopman, Holland.—p. 318.
*Action of Epinephrin on Kidney. F. A. Hartman and R. S. Lang, Toronto, Canada.—p. 321.
Endocrinopathic Constitutions and Pathology of War. N. Pende, Palermo, Italy.—p. 329.

Fetal and Maternal Athyrosis.—Smith maintains that the occurrence of disorders of the teeth, nails and hair during pregnancy indicates that there is a very wide occurrence of a more or less severe form of maternal athyrosis. The increase of the proteolytic enzymes in the blood of the pregnant woman tends to produce a condition similar to that under which fetal and maternal athyrosis is produced among domestic animals—not an abnormal condition, but still one that requires an abundant suply of iodin. Lack of function of the thyroid is a probable cause of albuminuria and toxemia of pregnancy which may be overcome by an abundant supply of iodin. A milk diet for the elimination of toxemia of pregnancy will probably be very disastrous to the fetus unless it be supplemented with an abundant supply of iodin. When either of the parents is suffering from a disturbance of the thyroid it is imperative that the ordinary diet should be supplemented with an abundant supply of iodin throughout the gestation period and possibly also when they are suffering from a disturbance of the parathyroids. To insure the normal function of the thyroid the ordinary diet should be supplemented with from one-half to 1 grain of iodin approximately daily during pregnancy and menstruation and for a period of seven days each month during puberty, especially during the first three months of the year.

Diabetes in Infancy and Childhood.—Abt agrees with other observers that diabetes in children is infrequent as compared with its occurrence in adult life. The symptoms are almost identical with those in adults. Enuresis is not an infrequent symptom. Urticaria, pruritis and eczema occur as well as furunculosis. The teeth decay early, and stomatitis is not uncommon. Edema about the face and ankles has been observed in advanced cases. Headache, backache and radiating pains in the extremities are sometimes seen. Particularly characteristic are pains in the calf muscles. The urine contains sugar, at times acetone and diacetic acid, and not infrequently albumen and casts. An early and conspicuous symptom is irritation of the external genitals. Diabetes in children may begin in a mild or severe form, though it must be observed that the transition from the mild to the severe form occurs more rapidly than in adults. In some cases the disease has not been recognized until after this transition has

occurred. Some children seem to improve after the sugar tolerance has been regulated and the urinary sugar kept low. At times they gain in weight. The temperature is inclined to be subnormal. When the glycosuria has disappeared none of the children lose their tendency toward it. Sugar returns on the slightest provocation. It reappears following psychic disturbances, such as disappointment about a journey or a bad school report. Sugar also tends to return following coryza, parotitis, pharyngitis and diarrhea. In most cases the sugar tolerance can be restored, but an accumulation of insults, that is frequent recrudescences, tends gradually to reduce permanently the level of tolerance. In consequence of this fact infections of the upper respiratory tract or other infections have an ominous significance and tend to produce complications in diabetic children. The younger the individual the more marked is the tendency for the disease to pass suddenly from the mild to the severe type. In Abt's experience such cases as he considered mild and amenable to dietetic treatment nearly always terminated fatally in the course of several months or a few years.

Function of Thymus.—The animals used by Uhlenhuth for his experiments were the larvae and adults of amphibians—water lizards, newts, mudpuppies or salamanders. His findings lead him to believe that the thymus does produce an internal secretion, but one which, so far as is known at present, has only a toxic effect in that it is the factor causing the "tetanie parathyreopriva." There are, however, Uhlenhuth says, no facts known at present to warrant the claim that the thymus gland does not produce an internal secretion which is required to maintain the normal physiologic condition of the organism.

Effect of Splenectomy on Thymus.—Observations were made by Mann on adult dogs, puppies, kittens, rabbits and goats from which the spleen had been removed as to the effect of this operation on the thymus. Decided variations were found, but there was no evidence that splenectomy produced any specific change. Most of the splenectomized animals died before the controls died, however, and under the same conditions that the controls were developing normally. While removal of the spleen in the young did not produce any noteworthy change in development, it seemed to make the animal less able to withstand the stress of life.

Influence of Thyroid on Formation of Antibodies.—Koopman claims that the injection of thyroid gland into rabbits causes the formation of an amboceptor with a high titer.

Action of Epinephrin on Kidney.—The experiments made by Hartman and Lang prove that epinephrin frequently causes dilatation of the kidney. This dilatation can be caused by action on the semilunar ganglion, dorsal root ganglia, or, in some cases, on structures in the kidney itself.

Georgia Medical Association Journal, Atlanta

September, 1919, **10**, No. 5

Diagnostic Skeptimism in Neurology. H. Crenshaw, Atlanta.—p. 89.
Aspiration of Pouch of Douglas as an Aid In Differentiating Atypical Cases of Ectopic Pregnancy and Pyosalpinx. R. A. Bartholomew, Atlanta.—p. 91.
Carcinoma of Breast; Surgical and Roentgen-Ray Treatment. W. A. Cole, Savannah.—p. 94.
Child Welfare a Community Responsibility. W. L. Funkhouser, Atlanta.—p. 96.
Surgery in Base Hospital in France. F. K. Boland, Atlanta.—p. 98.

Iowa State Medical Society Journal, Des Moines

Oct. 15, 1919, **9**, No. 10

Lethargic Encephalitis. G. W. Koch, Sioux City.—p. 333.
Recognition and Treatment of Labor Injuries. L. T. Kelley, Des Moines.—p. 337.
Gastric Ulcer from Standpoint of General Practitioner. C. W. Sanders, Northwood.—p. 339.

Journal of Orthopedic Surgery, Lincoln, Neb.

October, 1919, **1**, No. 10

*Diagnosis and Pre-Operative Treatment of Nerve Injuries. M. S. Danforth, Providence, R. I.—p. 593.
Operative Treatment of Paralytic Conditions of Upper Extremity. A. Steindler, Iowa City, Iowa.—p. 608.
Transference of Fibula as an Adjunct to Free Bone Graft in Tibial Deficiency. W. C. Campbell, Memphis, Tenn.—p. 625.

Nerve Injuries.—Danforth's paper is based on a study of the patients suffering from nerve injuries who were treated in Stiles' service at the Edinburgh War Hospital. Single examinations were never accepted as sufficient to indicate operative measures, except possibly the correction of deformities. As a rule, one examiner made all the tests. In this way it was possible for him to note at once any apparent discrepancies between the results of the voluntary power tests and the electrical responses, or between changes in muscle power and changes in cutaneous sensibility. Complete loss of voluntary power with loss of faradic excitability and with slow galvanic response, associated with anesthesia and analgesia over the area supplied by the nerve, and absence of tingling distal to the site of injury, means physiologic loss of continuity in the nerve trunk. Only repeated examinations can indicate the probability of anatomic loss of continuity, or that recovery will not take place. The general working rule was to wait from six weeks to two months after complete wound healing before operating, and during that time the patient had two and usually three complete examinations. In addition, a voluntary power examination was made each week. If, at the end of six weeks or two months, it was found there was no change in the condition, and that the examination showed a complete loss of physiologic continuity, or incomplete but unchanged loss, operation was done, if the amount of disability warranted it. The interval of six weeks or two months between the time of wound healing and the possible operative treatment was employed in improving the nutrition of the muscles, correcting any deformities and restoring flexibility of the joints in the affected extremity. If no deformities were present, the muscles were protected from stretching by appropriate splinting. This was found to be a very important feature and its lack was often sufficient to retard or prevent restoration of power in the muscles, and further, it was found necessary to maintain this relaxation constantly. This was, perhaps, especially so in circumflex, musculospiral and external popliteal paralysis, but undoubtedly is nearly as necessary in all nerve injuries. In addition to the protection given by splinting, the muscles were treated by hot soaks, or whirlpool baths, followed by massage and either active or passive motions, and electrical stimulation. In cases in which deformity was present, the deformity was corrected. For restoration of flexibility of small joints various methods were tied. Massage and hydrotherapy were found successful in a few instances. Forcible manipulations with or without anesthetic were found helpful in only a very few instances, and much more often rendered the joints stiffer. Finally, elastic traction was tried; at first pulling in direct flexion, if the fingers were fixed in extension. This was helpful in a certain number of cases and never made the condition worse. Then elastic traction in the direction to first stretch the joint capsules was tried. This was found a great advance. The traction was applied by strips of adhesive on the sides of the fingers to which elastic bands were attached, and these in turn were attached to the splint. The pull was at first always in the line of the deformity and then gradually changed as the motion in the joints permitted. Sometimes metacarpophalangeal joints which had been fixed in hyperextension for months would be completely flexed in two or three weeks, but usually several months were required.

Kentucky Medical Journal, Bowling Green

October, 1919, **17**, No. 10

Knife Blade Removed from Ethmoid; in Position Twenty-Two Years. G. C. Hall, Louisville.—p. 387.
Venous Thrombosis or Orbital Cellulitis; Report of Case. S. G. Dabney, Louisville.—p. 389.
Retention of Dead Fetus for One Month. B. C. Frazier, Louisville.—p. 390.
Carcinoma of Breast at Thirty-Four. S. Graves, Louisville.—p. 391.
Mixing and Administration of Arsenical Preparations. W. J. Young, Louisville.—p. 393.
Blue Cornea: Bilateral Deformity of Lower Eyelids: Carcinoma of Superior Maxillary Bone; Case Reports. S. G. Dabney, Louisville.—p. 396.
Doctor's Saddle Bag. E. W. Ford, Hartford.—p. 399.
Chronic Intestinal Indigestion in Children. G. Fulton, Louisville.—p. 400.

Injuries to Hand and Their Treatment. J. C. Sparks, Van Lear.—p. 404.
Diabetes Mellitus of Four Years Standing Followed by Pulmonary Tuberculous with Apparent Cure of Both Diseases as Told by Patient. E. A. Cram, Woodmen, Colo.—p. 408.

Minnesota Medicine, St. Paul

October, 1919, **2**, No. 10

Medical Education and the War. M. G. Seelig, St. Louis.—p. 369.
Recurring Inguinal Hernia. J. M. Masson, Rochester, Minn.—p. 373.
Surgical Treatment of Traumatic Epilepsy. A. C. Strachauer, Minneapolis.—p. 382.
Etiology, Pathology and Pathogenesis of Papilledema. P. D. Barrisford, St. Paul.—p. 385.
Treatment Study of Otosclerosis. J. A. Pratt, Minneapolis.—p. 390.
Some Legal Aspects of Medicine and Surgery. G. W. Peterson, St. Paul.—p. 392.
Desensitization in Serum Therapy. C. B. Drake, St. Paul.—p. 395.

Northwest Medicine, Seattle, Wash.

September, 1919, **18**, No. 9

Some Fallacies in Diagnostic Tests and Signs. K. Winslow, Seattle.—p. 175.
Routine Management of Duodenal Ulcer Cases. W. S. Lemon, Rochester, Minn.—p. 179.
Seattle Prostitution from Inside the Quarantine. W. R. Jones, Seattle.—p. 184.
Serum Reaction in Gonorrhea and Syphilis; Results of Blood Tests on Different Classes of Individuals. J. B. Kelly, Seattle.—p. 187.

Ohio State Medical Journal, Columbus

Oct. 1, 1919, **15**, No. 10

Certain Lessons from Military Surgery. W. E. Lower, Cleveland.—p. 614.
Some Pediatric Problems. H. J. Morgan, Toledo.—p. 617.
Diagnosis of Diseases of Digestive System from Standpoint of General Practitioner. J. H. Schroeder, Cincinnati.—p. 621.
Responsibility of Profession, Medical Schools and Teaching Hospitals for Improving Surgery. F. Martin, Chicago.—p. 625.
Cesarean Section Complicated by General Peritonitis; Recovery. W. D. Porter, Cincinnati.—p. 629.
Observations During Examinations of Candidates for Aviation Service. W. E. Murphy, Cincinnati.—p. 631.
*Vaccine Treatment of Pruritis Ani. J. M. Frick, Toledo.—p. 636.
Your Blood and Mine. M. H. Fischer, Cincinnati.—p. 638.
The Handicapped. H. E. Mock, Chicago.—p. 644.

Pennsylvania Medical Journal, Athens, Pa.

October, 1919, **23**, No. 1

Hospital Morale. D. Guthrie, Sayre.—p. 6.
Experiences of a Proctologist. L. H. Adler, Jr., Philadelphia.—p. 9.
*Place of Drugs in Treatment of Tuberculosis. S. S. Cohen, Philadelphia.—p. 11.
Rest in Prevention and Cure of Infections and Their Effects. J. M. Taylor, Philadelphia.—p. 13.
Diseases of Biliary Passages; Etiology and Pathology. F. D. Weidman, Philadelphia.—p. 16.
*Importance of Early Recognition of Paresis by General Practitioner. P. H. Weeks, Warren.—p. 19.
Plea for Cooperation of Family Doctor and State Hospital for Insane. I. A. Darling, Warren.—p. 22.
Benefits Derived from Combined Meetings of Physicians and Dentists. J. K. Eyler, Kittanning.—p. 24.

Drugs in Tuberculosis.—Cohen is of the opinion that it is now generally recognized that drugs occupy a secondary place in the treatment of tuberculosis, but unfortunately, it has been forgotten that they also occupy a necessary place. Without proper dietetic and hygienic management, drugs are of small service. On the other hand, Cohen does not believe that recovery is often complete and maintained without them. The relative failure of sanatorium treatment is to be attributed to the neglect of their powerful aid. Two groups of remedies have "stood the test of time"; namely, certain iodin compounds, and creosote and its congeners. The use of calcium, introduced on the somewhat crude basis that calcification and fibrosis are the natural methods of healing of tubercles and tuberculous ulceration, is also commended. These drugs help tuberculous patients to recover and to stay "well." Iodin in the infiltrative stage; phenol, creosote or guaiacol for use in the more advanced stage, or in the presence of fever; and calcium for use throughout, are, in Cohen's judgment, although secondary, nevertheless necessary agents in the successful management of the great mass of cases of chronic pulmonary tuberculosis. They are to be used freely—with discretion to be sure, and with individualization—but also with persistence.

Paresis.—Weeks emphasizes strongly that the paretic is a dangerous individual to be at large, especially during the early stage of the disease. Repeated blood and spinal fluid examinations should be made in all cases of syphilis long after active symptoms have disappeared. Observations should be made for neurologic symptoms and when they do appear the patient should be confined in a hospital immediately. No person showing a positive Wassermann on the blood and spinal fluid and any neurologic symptoms should be permitted to hold a position of trust and responsibility.

Public Health Journal, Toronto

October, 1919, **10**, No. 10

Immigration. C. K. Clarke.—p. 441.
Public Laboratory as Aid to Health Officer. A. J. Slack.—p. 445.
New Health Legislation. W. H. Hattie.—p. 455.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann.—p. 460.

United States Naval Medical Bulletin, Washington

October, 1919, **13**, No. 4

*Influenza. A. B. Clifford, and T. C. Kelly, and B. A. Thomas, U. S. Navy.—p. 637.
Infectious and Contagious Diseases on the Islands of St. Thomas and St. John, Virgin Islands of the United States, March-September, 1919. E. Peterson, U. S. Navy.—p. 682.
Naval Ambulance Trains Observed in Great Britain F. L. Pleadwell, U. S. Navy.—p. 706.
Bone Surgery: A Study of Three Cases. A. L. Clifton, U. S. Navy.—p. 718.
*Epidemic of Mumps. R. B. H. Gradwohl, C. F. Carter, W. S. Barcus, and H. L. Fougerouse, U. S. Navy.—p. 723
Constitutional Inferiority in the Navy T. A. Ratliff, U. S. Navy.—p. 728.
Acute Early Appendicitis. H. E. Jenkins and L. A. Will, U. S. Navy.—p. 733.
Extragenital Chancres. J. M. Perreet, U. S. Navy.—p. 736.
Influence of Incubation and Choice of Antigens in the Wassermann Reaction. E. D. Hitchcock, U. S. Navy.—p. 740.

Influenza.—This report is based on an analysis of 900 cases of influenza admitted to the U. S. Naval Hospital, Philadelphia, during the recent epidemic of that disease. For purposes of critical study the cases are divided into four groups: Group 1, including those patients which were admitted to the hospital within twenty-four hours of the onset of their illness; Group 2, those admitted within forty-eight hours; Group 3, those admitted within seventy-two hours, and Group 4, all those admitted at a later period of their infection. In Group 1 the most frequently mentioned chief complaint was headache, which occurred in 52.2 per cent. of the cases. Next in order of frequency were chills, general muscular pains, cough, backache, sore throat, weakness and coryza. In Group 2, headache was again the most frequently mentioned chief complaint, occurring in 34 per cent. of the cases, and followed by general muscular pains, cough, chills, backache, coryza, sore throat and weakness. In Group 3, headache occurred in 32.7 per cent. of the cases, followed by chills, general muscular pains, cough, coryza, bachache, sore throat, weakness and nausea. In Group 4, headache was again the moch common chief complaint, occurring in 30.6 per cent., followed by cough, chills, general muscular pains, backache, weakness, coryza, sore throat, nausea and vomiting, and dyspnea. On examination the physical sign most frequently encountered in Group 1 was râles, which occurred in 51.9 per cent. of the cases. In Group 2 râles occurred in 55.8 per cent. of the cases. In Group 3 râles occurred in 74.4 per cent. of the cases. In Group 4 râles occurred in 74 per cent. of the cases, followed by toxemia, cyanosis, congestion of the throat, eyes and nose, delirium, pleuritic friction, herpes, enlargement of the superficial lymph glands, jaundice, erythemia and hiccup, as was also the case in the first three groups. The complication most frequently encountered in Group I was bronchitis, which occured in 43.3 per cent. of the cases, followed by pneumonia, which occurred in 8.5 per cent. In Group 2 bronchitis occurred in 40 per cent. of the cases, followed by pneumonia in 15.7 per cent. In Group 3 pneumonia was the most frequent complication, occurring in 42.2 per cent. of the cases. In Group 4 the most frequent complication also was pneumonia, which occurred in 42.8 per cent. of the cases, of which 40.4 per cent. were bronchial in type and 2.4 per cent. lobar. The pneumonia most often

was of the bronchial type. The next most frequent complication in Groups 3 and 4 was bronchitis, followed by myocarditis, nephritis, epistaxis, pleurisy, endocarditis, otitis media, abdominal distention, and two cases each of cholecystitis and retention of urine, and one case of typhoid. In Group 1, which included 352 cases, 82 per cent. of the patients recovered without stimulation and 0.3 per cent. died; of those requiring stimulation 13.9 per cent. recovered and 2.5 per cent. died. In Group 2, comprising 197 cases, 73 per cent. recovered without stimulation and 1 per cent. died. Of those requiring stimulation 17.2 per cent. recovered and 7 per cent. died. In Group 3, which included 116 cases, 47.5 per cent. recovered without stimulation with no deaths. Of those requiring stimulation, 21.5 per cent. recovered and 27.5 per cent. died. In Group 4, which included 235 cases, 48.1 per cent. recovered without stimulation and none died. Of those requiring stimulation, 20 per cent. recovered and 29.8 per cent. died. In summarizing all the cases, irrespective of their groups, it was found that the chief complaint was headache; the most common symptoms were headache and cough; and the most constant sign found on examination was râles, either as an expression of bronchitis or pneumonia. Of the complications, bronchitis was found in 37.8 per cent. of the cases and pneumonia in 23.3 per cent.; 21.9 per cent. were bronchopneumonia and 1.4 per cent. lobar pneumonia. Myocarditis occurred in 14.4 per cent. of the cases, epistaxis in 9.6 per cent., nephritis in 7.3 per cent., and pleurisy in 4.1 per cent. There were eight cases each of endocarditis and abdominal distention, two cases each of cholecystitis, sinusitis, retention of urine, and meningitis, and one case each of typhoid fever and epididymo-orchitis. The death rate for the cases of pneumonia was 63.3 per cent., and the total death rate, irrespective of the complications was 14, 7 per cent.

Study of an Epidemic of Mumps.—Convalescent serum was injected by Gradwohl and others in a number of cases of mumps. Five c.c. serum was used for both subcutaneous and intravenous injections. Very little reaction was noted. The effect of these injections was a lessening of pain and an earlier subsidence of swelling, together with an earlier drop in temperature.

West Virginia Medical Journal, Huntington

October, 1919, **14**, No. 4

Clinical and Pathologic Studies of Pandemic Influenza. A. Arkin, U. S. Army.—p. 121.
Influenza Prophylaxis. S. D. Hatfield, Iaeger, W. Va.—p. 125.
"Damn the Flu, Anyway." C. H. Maxwell, Morgantown, W. Va. —p. 131.
Organization of Public Health Forces. M. B. Williams, Wheeling. —p. 140.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

May, 1919, **8**, No. 5

*Lack of Pulsation in Umbilical Cord. Paul Balard.—p. 245.
The Maternity at Lille During German Occupation. J. Vanverts.—p. 263.
Repopulation Problems in France. G. Vitroux.—p. 279.
Welfare Work in Italy for Mothers and Prospective Mothers. A. Laffont.—p. 292.

Lack of Pulsation in Umbilical Cord with Living Child.—Balard affirms on the basis of much clinical experience and experimental work that the lack of pulsation in the prolapsed umbilical cord does not inevitably imply that the child cannot survive. Auscultation may reveal life in the child, and even when the auscultation findings are negative the fetus may still be living. The lack of pulsation in the cord may be due solely to compression at some point reducing the caliber of the vessels. With prolapse of the still pulsating cord, he advises during the period of dilatation to push the cord back if possible; expectant treatment in any event if there is reason to anticipate resistance from the soft parts, giving chloroform or morphin to moderate the contractions of the uterus. On the other hand, if the period of expulsion is under way, he advises to proceed at once to artificial extraction of the child unless an extremely rapid spontaneous expulsion seems impending.

Journal de Médecine de Bordeaux

September, 1919, **90**, No. 17

*Pseudo-Angina Pectoris. Moulinier.—p. 351.
Fracture of the Forearm. R. Darget.—p. 353.
*Ileus from Diverticulitis. H. L. Rocher.—p. 355.
*Tardy Epilepsy and Senility of the Brain. Anglade.—p. 356; Id. p. 358.

Pseudo-Angina Pectoris.—Analysis of the stethoscopic findings in the case reported by Moulinier demonstrated that the obstruction to the circulation was in the venous rather than in the arterial system. The patient was a man of 53 and the sudden agonizing pain back of the sternum came on only after effort, such as walking soon after a meal. The balance in the circulation is soon restored, so that this venous form of angina pectoris is never fatal although causing these attacks of intense pain as the years pass. The mechanical disturbance is like that with tricuspid stenosis. The minimal blood pressure keeps at the normal figure. When the arm is raised above the level of the heart, the flow of the venous blood out of the arm is facilitated by gravity, and the arterial wave finds readier access; if the arterial circulation is at fault, the maximal pressure instead of dropping keeps at the same figure as when the arm is held horizontal. In the case reported, the maximal arterial pressure at the wrist during an attack, the arm on a level with the heart was 17, with the arm raised 16, with the arm pendent 21. The corresponding minimal pressure figures were 10; 7; 12, and the pulse did not vary. The stethoscope revealed the upset of balance between the pulmonary and aortic systems (doubling of the second aorta period); a strong blood wave in the aorta, and increased pressure inside the right auricle (the sounds at the tricuspid more explosive), but this increased pressure does not affect the valves in the left side of the heart (the second mitral sound extinct) nor force the myocardium to the effort which the explosive aortic sounds seem to indicate (first mitral sound remote). The patient showed numerous varicose signs in the limbs with other signs of hampered return circulation, but the jugulars were not turgid and the venous pulse was normal. All the heart valves were sufficient.

Diverticulitis and Ileus.—Rocher gives an illustration of the way in which the inflamed diverticulum of Meckel in a boy of 13 had become inflamed and adherent to the mesentery, constricting two loops of the bowel.

Tardy Epilepsy.—Anglade has encountered in the last ten years four cases of epilepsy developing between the ages of 46 and 60. In one it was preceded by seven years of a tendency to melancholia with transient phases of agitation. Necropsy showed a strip of sclerosis, resembling shagreen leather, on each side of the brain, extending from the frontal to the occipital pole, apparently skipping the motor convolutions but the microscope showed that these also had been involved. He reiterates that these cases of epilepsy in the elderly will well repay study as they show transitional forms between the epilepsy of organic nature and the epilepsy still called essential and functional.

Lyon Médical

August, 1919, **128**, No. 8

Creation of Sanatorium Hospitals. F. Mouisset.—p. 369.
*Radium Treatment in Gynecology. R. Condamin and L. Nogier. —p. 372. Conc'n.
Some Souvenirs of German Army Surgeons. A. Gouachon.—p. 413.

Radium in Gynecology.—Condamin and Nogier here conclude their long article on this subject. Their experience with radium treatment in 750 cases has confirmed, they say, the absolute necessity for radium treatment for all uterine cancers at the limit of operability as a preliminary to an operation, and also when the cancer is manifestly inoperable; also to relieve extensive cancers, hoping for nothing beyond arrest of hemorrhages and attenuation of the pains, and, finally, for postoperative recurrences in the vagina or lower parametrium. Besides the above absolute indications for radium therapy, they list as relative indications certain operable cancers, especially the infiltrating forms in young women which often give such deplorable results after an operation. A further relative indication is after hysterectomy,

to root out the last possible traces of the neoplasm. It seems to be established, they add, that large doses are indispensable for uterine cancer, up to 250 mg. in a forty-eight hour application, never going below 100 or 125 mg. Striking hard once and for all seems to give a durable result more effectually than any succeeding applications can yield.

Presse Médicale, Paris

September 22, 1919, **27**, No. 53

*Suprarenal Insufficiency. A. Sezary.—p. 533.
*Tuberculosis of the Urinary Apparatus After Fifty. C. Lepoutre. —p. 535.
*General Anesthesia by Pharyngeal Intubation with Delbet's "Pipe." L. Dufourmentel.—p. 537.

Suprarenal Insufficiency. — Sezary classifies suprarenal insufficiency under three headings: the fulminating, rapidly fatal form; the monosymptomatic form (myasthenia or amyotrophy), and the form inducing a whole set of symptoms: acute (syndrome of Sergent-Bernard); subacute and slow (Addison's disease and its varieties). Tuberculosis may induce any one of these "syndromic forms" of suprarenal insufficiency, and syphilitic processes often locate in the suprarenals, as also those of diphtheria, typhoid and other acute infections. Specific treatment should be given when such is possible, antitoxin with diphtheria, for example, or quinin with malaria. Rest and suprarenal treatment are useful whatever the infection, but he prefers the extract of the whole gland, and given by the subcutaneous route. He reserves epinephrin for acute disturbances with collapse of the heart, and recommends the subcutaneous route. He gages the dose by the therapeutic results obtained with the first doses and by the signs of intolerance. A rise in the blood pressure is a good index of the efficacy of the opotherapy, but the fact that it does not rise does not prove that the treatment has been ineffectual. A still more instructive index is the finding with the dynamometer showing the variations in the strength of the muscles tested fifteen and thirty minutes, one hour, three hours and so on after the injection of the suprarenal extract. When these two tests show a favorable influence from the suprarenal treatment, he keeps up this dose, not increasing it until the effect grows less pronounced. The appearance of tremor calls for caution; glycosuria, albuminuria, circulatory disturbances require suspension of this treatment. In some cases the doses have to be high and kept up for several weeks or even months before a good result is obtained. Signs of intolerance should be watched for with special care in these circumstances. Sometimes addition of pituitary will give surprisingly fine results when the suprarenal treatment is a failure. With cheesy tuberculosis and cancer, the knife is still the ideal treatment, possibly resecting only the pathologic tissues and leaving the rest intact. But in order that this can be done the disease has to be diagnosed early, and it is to be hoped that the progress of medicine will soon render this possible.

Tuberculosis of the Urinary Apparatus After Fifty.—Lepoutre remarks that Rochet is the only writer he knows of who has called attention to tuberculosis of the urinary apparatus in elderly men. He describes a case of the kind in a man of 58 which proved fatal in little less than a year from the first symptoms. Analyzing some published statistics shows that tuberculosis of the urinary apparatus is not exceptional after 50, and it occurs in about the same proportion in men and in women, but the number of operable cases in men after 50 is exceptionally small. It escapes diagnosis only because physicians do not think of it, as a rule. In 1,530 cases he has compiled from the literature, 44 were in men over 50, and an operation was attempted only in 13 in this group. In the 13 operative cases 7 terminated fatally in one day up to five months; the outcome is not known in 4 cases; one died twenty months later, and only Verhooghen's one patient was still well after an interval of six months. These bad results justify nonoperative treatment, he says in conclusion.

General Anesthesia by Pharyngeal Intubation.—Dufourmentel lauds the superiority of Delbet's pharyngeal tube for this purpose. It is much simpler, more effectual and less harmful than an intralaryngeal tube, for general anesthesia, with operations on the neck and face, while it prevents blood running down into the esophagus or air passages. He gives an illustrated description of it.

Revue Médicale de la Suisse Romande, Geneva

Aug. 1, 1919, **39**, No. 8

*Trauma of the Chest and Pulmonary Tuberculosis. Tecon.—p. 361.
Psychotherapy and Its Indications. A. Rabinovitch.—p. 380.
Medical Certificate as Requisite for Marriage Licence. Lévy Du Pan. —p. 394.
Influenza in the Insane. V. Demole and M. Alikan.—p. 397.

Trauma of the Chest and Pulmonary Tuberculosis.—In this instalment of his long article, Tecon gives the details of twenty-seven cases of war wounds of the chest among soldiers of the Allied armies interned in Switzerland. Tuberculosis had been assumed in all, but only 18.5 per cent. had tubercle bacilli in their sputum. In only 7.4 per cent. was there any evidence connecting the pulmonary lesion with the war wound. All the men had been long in captivity in Germany, and yet notwithstanding the depressing conditions of their imprisonment, tubercle bacilli only very rarely invaded the lungs and only exceptionally settled at the site of the war wound. This was the more remarkable as some of the men had old tuberculous glandular lesions. Tecon examined further 1,033 known tuberculous interned soldiers and found that only 1.1 per cent. had had a chest wound at any time, thus confirming his assertion of the rarity of pulmonary tuberculosis consecutive to penetrating wounds of the thorax.

Revue Neurologique, Paris

June, 1919, **26**, No. 6

*Origin and Nature of Sclerosis in Patches. G. Marinesco.—p. 481.
*Pathogenesis of Tabes. O. Gallotti and S. Azevedo.—p. 489.
Decompressive Trephining to Relieve Ménière's Vertigo. H. Aboulker. —p. 493.

Origin and Nature of Sclerosis in Patches.—Marinesco insists that study of this disease should be on the basis that it is of inflammatory origin, and that some infectious agent is responsible for this inflammation. He injected six guinea-pigs with cerebrospinal fluid from two persons who had pronounced symptoms of sclerosis in patches. The injections were made into the brain, peritoneum and spinal cavity. The outcome demonstrates, he states, two new facts, namely, the transmissibility of the disease by means of a virus, and that this virus is represented by a special spirochete quite distinct from the pale spirochete. These assertions do not seem to harmonize with the isolated character of sclerosis in patches; it is not epidemic or endemic, and it seems to be exclusively limited to the central nervous system. The evolution of the disease, the successive waves, and especially the aspect of the fundus of the eye, which mirrors the different phases of the parasites, analogous to that in syphilis—all point to the spirochete found by Kuhn and Steiner and by himself as the probable pathogenic agent of the disease. One thing is certain, he remarks in conclusion, sclerosis in patches is an actual entity and not a set of symptoms from diverse causes. The localizations of typhus in the central nervous system look entirely different.

Pathogenesis of Tabes.—Gallotti and Azevedo report inoculation of three dogs with trypanosomes. Degeneration of the nerve fibers of the spinal cord was pronounced the twenty-fifth day afterward (Weigert method) in one of the dogs; the others died soon after the inoculations. The findings confirm Spielmeyer's findings in the dogs inoculated with *Trypanosoma brucei* and developing trypanosomic tabes. The symptoms in none of the dogs were very pronounced, but the posterior roots, the optic nerve and the trigeminal showed marked degeneration.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Sept. 4, 1919, **49**, No. 36

*Parenteral Injections of Milk in Therapeutics. Peter Ryhiner.—p. 1337.
*Extravasal Coagulation of the Blood. A. Rodella.—p. 1345.
*Surgery of the Base of the Brain. Henschen and Nager.—p. 1349. Conc'n.

Parenteral Injections of Milk.—In this communication from the university children's clinic at Zurich, Ryhiner reports

that there were no therapeutic results from the subcutaneous injections of milk in any of a large number of diseases tested, in hemorrhagic nephritis, in diphtheria bacilli carriers, in erysipelas, in anemia, and in attempts to activate the protoplasm in the prematurely born and others. No reaction of any kind was observed with absolutely fresh milk, approximately sterile, nor with breast milk. The reaction seems to be due to bacterial toxins or decomposition products of the milk. The reaction in the blood-producing system is much less and is inconstant in infants in comparison to older children. The rarity of phenomena indicating anaphylaxis may be explained by assuming that milk by the mouth induces anergy. He tabulates the differential blood count before and at different intervals after the injection in eight children from 8 days to 12 years old, and also in two injected with perfectly fresh cow's milk, and three with breast milk. In this last group of five there was absolutely no modification in the blood picture. Although his experiences were thus negative, he does not denounce the protein therapy but warns not to neglect old and tried measures for it.

Extravasal Coagulation of Blood.—Rodella calls attention to the difference in the aspect of the crusta phlogistica whether there is or is not a serious pathologic modification in the coagulation of the blood. By crusta phlogistica he means the yellowish, shriveled, bacon-like appearance of the crust that forms on the blood clot. In uremia and in the pregnant this crust is more transparent than under other conditions, and there is no sharp demarcation between the crust and the blood clot below while the latter looks paler and less compact than usual. The crust with pneumonia differs completely from this nonphlogistic type.

Transethmoidal Access to Pituitary Tumors.—Henschen and Nager conclude their discussion of surgery of the base of the brain in general with an illustrated description of a paranasal method of reaching a pituitary tumor through the ethmoidal sinus. The incision starts in the middle of the eyebrow, keeps in it and is carried in a broad curve down on the cheek and outward on the cheek to a point nearly directly below the starting point. The flap thus lifted up and turned back includes the whole of the contents of the anterior half of the orbit. This is Chiari's technic, and they have applied it recently in a case described. The subjective improvement was pronounced, the vertigo, asthenia, headache and vomiting subsided, as also in Kahler's, Chiari's and Schmiegelow's experience. The visual disturbances retrogressed by sectors as they developed, and the retrogression may be complete or only partial, and even this depends on the operation coming in time. Even the acromegaly may retrogress. The menses return and erections, but the full sexual functions have never been completely regained. In the case of the man reported there was secretion of milk by the third year of the lesion; it disappeared after the operation. Thus experience confirms that the secretion of milk is not connected with specifically female endocrine organs, but can occur by the action of the pituitary alone. Roentgen treatment of pituitary tumors seems to be winning its way, but cannot apply to treatment of cysts, abscesses, hydrocephalus and similar lesions. Roentgen treatment is certainly advisable after removal of the pituitary to ward off recurrence. In conclusion they review the whole field of the pathology of the pituitary, classifying under seven headings the various pathologic conditions that have been encountered in the pituitary. The list includes aneurysm, spontaneous hemorrhage, echinococcus disease, tuberculous and syphilitic processes, etc., besides primary and metastatic tumors.

Riforma Medica, Naples

Aug. 23, 1919, **35**, No. 34

*Secondary Hemolytic Jaundice. G. Bernardi.—p. 710.
*Auscultation with the Tuning-Fork. Guido Izar.—p. 714.
Treatment of Spirochetosis icterohemorrhagica. G. Molinari.—p. 716.
Surgical Sterilization. E. Aievoli.—p. 717.

Secondary Hemolytic Jaundice.—In the first of the two cases reported by Bernardi, the hemolytic jaundice developed late in the course of pernicious anemia; in the second case, late in pulmonary tuberculosis. He discusses the mechanism.

Auscultation of Tuning-Fork Resonance.—Izar expatiates on the valuable information to be obtained with the tuning-fork and phonendoscope applied to the internal organs, fractured bones, etc. Cantlie uses a heavy tuning-fork, 410, with a tapering base, but Izar has found more instructive one with 512 vibrations and a rectangular base, 0.5 by 1 cm.

Aug. 30, 1919, **35**, No. 35

*Transmission of Typhus by Lice. G. Mueller and L. Urizio.—p. 734.
*Otorhinolaryngology and the Practitioner. G. Gradenigo.—p. 735.
Aortic Lesions of Thyroid or Neurotic Origin and Aortic Lesions in Persons with Hyperthyroidism or Neuroses. D. Cantelli.—p. 738.
Heart and Lung Changes in Miners. Augusto Jona.—p. 743.
Radical Treatment of Acute Empyema. S. Dalmazoni.—p. 744.
Appendicitis with Movable Kidney. D. Giordano.—p. 752.

Transmission of Typhus by Lice Stools.—Mueller and Urizio report the results of experimental research which confirm that the dejecta of lice are able to transmit typhus even without the bite of the insect. A laboratory accident confirmed this even more strikingly: the syringe filled with the emulsion of lice stools was being held by Urizio while Mueller was holding the guinea-pig ready for the injection, when the animal jerked and spilled the emulsion over the hands of both. Urizio was immune, having had typhus two years before, but Mueller, whose hands were irritated from other causes, developed seventeen days thereafter a classic form of typhus.

Otorhinolaryngology and the General Practitioner.—Gradenigo protests emphatically against the carelessness or ignorance of general practitioners in failing to diagnose mastoid disease, failing to treat properly acute otorrhea or disease of the upper air passages, or else going to the other extreme and mistaking impacted wax, for instance, for some serious condition. He cites two or three dozen cases typical of these blunders. The serious results from them in soldiers made a particularly striking impression, men dying from mastoiditis probably avoidable or curable, and, on the other hand, men wasting their time in hospitals merely on account of disturbance from impacted wax. One man had thus escaped military service, being at the front only fifty days in two years. The study of the ear, throat and nose is optional in the Italian medical schools, and few take advantage of the opportunities for this. Gradenigo asserts that the experiences here related, to which he could add many more, justify making compulsory some study of those organs and their pathology.

Medicina Ibera, Madrid

Aug. 16, 1919, **8**, No. 93

*Spinal Anesthesia in Gynecology. F. Navarro Blasco.—p. 113. Concluded in No. 94, p. 133.
*Eclampsia without Albuminuria. J. B. Silvestre González.—p. 115.
Chancres Inducing Hypospadias. Sicilia.—p. 117.
Case of Pernicious Cardialgic Malaria. M. S. Manzano.—p. 118.

Spinal Anesthesia in Gynecology.—Summarized when published elsewhere. See page 1021.

Eclampsia Without Albuminuria.—Silvestre remarks that the absence of albumin from the urine of the pregnant does not exclude peptonuria, but albuminuria very rarely occurs without peptonuria. The latter may be the expression of insufficiency of the liver, and he thinks it should warn of possible eclampsia even when no albumin can be found in the urine. If the experience of others confirms this assumption, we have thus a simple means at our disposal for the foretelling of eclampsia as the determination of peptonuria is easier than the quantitative tests for albumin, etc.

Aug. 23, 1919, **8**, No. 94

*Chronic Serpiginous Venereal Ulcer Subsides under Tuberculin. M. F. Criado.—p. 136.
Tracheotomy as an Emergency Operation. C. Calderón.—p. 139.

Venereal Ulcer of Long Standing Heals Under Tuberculin.—Criado relates the further history of a case of serpiginous venereal ulcer published by Azúa as a typical instance of the rebellious nature of these lesions. The condition four years later was practically the same as in Azúa's description. Criado then gave eleven intravenous injections of tartar emetic to a total of 0.75 gm. No benefit was apparent from this, and he then gave a series of eight injections of a tuber-

culin in minute doses. Each one induced a local reaction but no focal or general reaction. By the sixth injection the chancrous ulceration had entirely healed and the others were nearly healed over. There were no signs or symptoms of tuberculosis or syphilis, and the possibility of mycosis was suggested, but there was no growth in any of the various culture tests made. Whatever the explanation may be, the rapid cure under tuberculin of a lesion of ten years' standing is an established fact. Analogous experiences have been reported with rebellious eczemas. Criado suggests that possibly the preceding course of tartar emetic may have cooperated in the cure, and advises in similar cases to try tuberculin first. If this fails, give a course of tartar emetic and follow with the tuberculin anew.

Progresos de la Clínica, Madrid

July, 1919, **7**, No. 79

*Auricular Fibrillation. Luis Calandre.—p. 5.
*Secondary Malaria. II. Salvador Clavijo.—p. 16.
*Degeneration and Regeneration of the Deep Membranes of the Eye. II. Muñoz Urra.—p. 28.
*Lichen Eruption from Grain Dust during Thrashing. F. Garcia Pastor. —p. 42.

Auricular Fibrillation.—Calandre reports a case of auricular fibrillation in which the complete arrhythmia occurred in paroxysms. The man was a morphin addict and, during a course of treatment for this, developed the auricular fibrillation when his system was clamoring for the morphin. It subsided regularly as soon as morphin was given him, and after the course of treatment was carried to a successful conclusion there was no return of the auricular fibrillation. As a rule, however, the prognosis of auricular fibrillation is extremely grave. Surprising benefit may be realized, however, from heart tonics in cases of rheumatic origin. Under digitalis the edema may subside and the whole condition become quite satisfactory, but the irregularity never entirely disappears. He advises to give digitalis when the heart beat goes above 100 during repose. Milk or vegetables should be the main reliance in food, without salt as long as there is edema. He keeps up the digitalis for four days, stopping when the pulse drops to 70. Other heart tonics may be preferable in certain cases. Fourteen typical pulse tracings are reproduced.

Secondary Malaria.—Clavijo discusses in this article the excessive functioning of the spleen, with or without its enlargement, as studied on a large number of patients. He discusses the localization of symptoms in the different organs, anemia and melanemia, the mechanism of the relapses, means to fortell the impending chill and fever, the treatment and prophylaxis. In speaking of the ravages of malaria in Spain and its possessions in Africa, he quotes statistics showing an average annual mortality from malaria of 301,260. He states also that of the 9,261 towns in Spain, malaria is present in 1,818. He reiterates that the expense of reclaiming malarial regions by proper engineering, etc., would be more than offset by the increased productivity of the land, to say nothing of the saving in lives. In his own region malaria is increasing rapidly. In one regiment of 1,748 men, 208.35 per cent. were given treatment during 1916 while only 90.97 per cent. required it in 1913. He points to what Gorgas accomplished in Panama and what the Argentine Republic has accomplished since it made registration of malaria compulsory in 1907.

Regeneration of the Retina.—Muñoz gives ten colored views of the degeneration and regeneration of the deep membranes of the eye, and describes the mechanism of the repair of tissues as studied by his special method of silver staining. The neoformation of the axis-cylinder processes of the nerve cells proceeds to an actually surprising extent but the cicatricial tissue forming in the choroid prevents the restoration of the nerve elements, the cicatricial tissue smothering the newly formed axones. He declares in conclusion that the regeneration of the retina is now an established fact, but it is impotent to restore the vitality of the membrane on account of its being hampered by the medium in which it has to develop.

Eruption from Grain Dust.—The symptoms in the woman whose case is described by Garcia resemble those of hay-fever to some extent, but there is also a severe itching lichen eruption on the uncovered parts of the body. This eruption develops as soon as the grains begin to ripen, and it returns again and again until the harvest is entirely over. No treatment has proved effectual, but all symptoms subside as soon as she leaves the farming country for the city. The eruption has returned every year for eight years, to date, and no drug or local treatment of the nose with preparations of grains has proved effectual.

Revista Médica de Chile, Santiago

August, 1919, **47**, No. 8

*Proteose Therapy of Typhus. E. Prado Tagle.—p. 413.
*Id. F. Opazo.—p. 433.
*Typhus in Chile. Arturo Atria.—p. 438. Cont'n.
Decompressive Trephining for Brain Tumor. H. Lea-Plaza.—p. 461.
The Scientific Work of Prof. R. Kraus.—p. 466.

Protein Therapy in Typhus.—Prado Tagle was impressed with the possibilities of Nolf's method of intravenous injections of peptone in treatment of infectious diseases, and he applied this technic in fifty-nine cases of typhus. Aside from one patient that died in less than forty-eight hours, the mortality was about 5 per cent. The absence of by-effects confirms the harmlessness of the method for all ages, he declares in conclusion. The general health improves, the duration of the disease is shortened, and convalescence sets in earlier. The benefit was more pronounced the earlier the injections had been begun. His report represents extensive research by the different physicians on the hospital staff, much experimental and laboratory work being carried on preliminary to and during the clinical experiences. Nolf's technic was closely followed, except that the acidity of the solution of peptone in physiologic serum was reduced to 4.3 per thousand, and the remedy was put up in 5 c.c. capsules. About 10 c.c. was given as the first dose, to robust adults, otherwise from 4 or 5 c.c. for older children, up to 6 or 8 c.c. giving afterward only about half of the initial dose, and allowing an interval of forty-eight hours to elapse. In almost all the cases a second injection was given and, exceptionally, a third, with only 1 or 2 c.c. A subcutaneous injection of 2 or 3 c.c. of 20 or 25 per cent. camphorated oil was given every six hours day and night, with 0.25 c.c. of 1 per thousand epinephrin in each syringe. The patient must be kept in repose. The blood pressure falls during and immediately after the intravenous injection of peptone, but if it is made slowly (1 c.c. per minute) and if epinephrin has been given, the drop is slight. The coagulation time of the blood is much retarded. Analysis of the blood showed that the urea content could be disregarded with this protein therapy as the latter only slightly augmented it, and it soon dropped to below its previous figure from the rapid reaction to the injection, while the dietetic restrictions in typhus aid in its being speedily cast off. Analysis of the urine likewise showed that the injections of peptone had no detrimental influence on the kidneys and hence there were no contraindications on the part of the kidneys, except of course with grave nephritis. There are no characteristic findings in the urine in typhus. The fever charts given show the attenuating and abbreviating influence of the protein therapy better than anything else. An interesting feature of the cases was that when the temperature had gone down under the injections, a further injection did not induce any appreciable reaction. The production of antitoxins can then be regarded as sufficient and the case as cured. In every case improvement in the general condition was unmistakable.

Protein Therapy of Typhus.—Opazo reports the application of Nolf's method in 27 cases of typhus, with 14 recoveries, 4 in convalescence and 7 still under treatment; 2 of the patients died, but the disease in their cases had reached a stage when reaction was no longer possible. He reiterates that the protein therapy induced a favorable reaction which modified the disease and all the symptoms. In his experience the reaction was prompter and more effectual in children than in adults. He is now applying this protein therapy as the routine treatment in all cases of typhus.

Typhus in Chile.—Atria here continues his historical sketch of typhus in Chile.

Revista de Medicina y Cirugía, Havana

Sept. 10, 1919, **24**, No. 17

*Projectile in Base of Brain. Rogelio Stincer.—p. 439.
The Venereal Peril. José Arias Avellán.—p. 442.

Bullet in Base of Brain.—Stincer relates that the boy of 15 was bleeding profusely, the bullet having traversed the tongue, arch of the palate and nasal fossae on its way from the median suprahyoid point of entrance to its exit at the right nasal fossa. The blood came mostly from the tongue, tamponing not arresting it. Stincer threw a ligature around the external carotid artery in the carotid triangle and the bleeding stopped at once, and by the tenth day the boy was able to eat naturally. The eighteenth day remittent headache developed. Stincer had warned the father that headache might be a symptom of traumatic meningo-encephalitis or abscess. The boy was operated on later by others and died, and the family ascribe the fatality to Stincer's having "ligated the vein."

Revista de Medicina y Cirugía Prácticas, Madrid

June 28, 1919, **123**, No. 1560

Emetin by the Vein in Treatment of Influenza. Mariano Maldonado.—p. 421.
Bilateral Optic Neuritis with Atrophy, Consecutive to Sudden Suppression of the Menses after Emotional Shock. J. García del Mazo.—p. 426.

July 7, 1919, **124**, No. 1561

Diagnostic Importance of the Cerebellar Syndrome. E. Fernández Sanz.—p. 5.

July 21, 1919, **124**, No. 1563

Criminal Responsibility. F. Bravo y Moreno.—p. 81.

Revista Medica del Uruguay, Montevideo

July, 1919, **22**, No. 7

*Infant Mortality in Uruguay. Julio A. Bauzá.—p. 489.
Welfare Work for Tuberculous Children. P. Ernesto Duprat.—p. 495.
*Hysteria. Oscar Fontecilla.—p. 513.
*Health and Mind of Children as Dependent on Economic Conditions in the Home. S. C. Rossi.—p. 519.
*Congenital Blindness. Joaquín de Salterain.—p. 522.
*Epidemic Poliomyelitis. F. Figueira and Others.—p. 560.

Infantile Mortality in Uruguay.—Bauzá urges that both national and municipal vital statistics should list the deaths separately, according to the causes, for each of the first four weeks of life and then month by month to the end of the first year, and then year by year up to the fifth year. He suggests further that the form of feeding used for two weeks before the death should also be recorded, as also whether the child is illegitimate or not. An annual summary should be published giving these particulars in detail. The statistics of the municipal registration area should be kept separate from those of the suburbs, which are beyond the jurisdiction of the municipality. Births and deaths in the public institutions, he adds, should be recorded in the statistics of the place of residence. He also urged the federation of all societies and organized efforts for welfare work for mothers and children, extolling the creation in all countries of an organization like that of the Children's Bureau at Washington to centralize and direct the efforts to reduce the infant death rate. He remarks parenthetically that 108 per thousand of living children born in Uruguay die before reaching their second year, while the rate in Southern Australia is only 62.

The Biologic Significance of the Phenomena of Hysteria.—Fontecilla argues that hysteria is an atavistic survival of the open manifestation of emotions which civilized man suppresses more or less completely but which primitive man and women and children still have found useful in the struggle for existence. Primitive man yelled and gesticulated to frighten away the enemy attacking him; children scream and throw themselves on the floor when they are angry, and women's tears are still their most decisive argument. These reactions to emotions have thus a useful purpose for the person making use of them. But they are forms of defensive reactions which man in civilized life is abandoning more and more for other means better suited to the difficulties he has to overcome, that is, for more rational means. He does not merely yell and gesticulate to frighten off the attacking enemy, but the higher the civilization he has attained, the more he reflects, calculates and acts without wasting his energy in emotional manifestations. The emotional reactions are atomic manifestations of the struggle for existence, but they are atavistic manifestations. They can be traced in primitive man and in certain animals, and analysis of the manifestations of hysteria shows that there is no essential difference between them and the ordinary reactions to emotions. The difference is merely in intensity and degree, not in quality. What is the difference between syncope in an apparently normal person at some sudden catastrophe or great misfortune and the syncope in a hysteric woman from some trivial cause? What is the biologic significance of the syncope? It is a defensive reaction that benumbs the appreciation of the great grief or catastrophe as chloroform abolishes pain. But the hysteric make excessive use to actual abuse of this means of defense. And they accomplish their purposes with it. But these triumphs with the aid of these abnormal means, he reiterates, all have one indelible stamp: "They are antisocial. The triumphs of hysteria are invariably of an egotistical and antisocial nature." Only the minutest proportion of cases of hysteria come to the knowledge of physicians; the majority of its manifestations in conjugal life, in the home and in society are recognized only by the experienced psychologist. "The mental abnormality responsible for hysteria is at its maximum in the young, and with proper training and environment the milder forms subside so that it is very rare in the elderly."

Health of Children in Relation to Income.—Rossi presents in picturesque terms a plea for protection of children against poverty and against superabundance. Each of these is almost equally detrimental. The living cell, he says, is "the great rebel that dictates terms to emperors. We can apparently conquer it because we seem stronger than it, but from its hidden nook it strikes back and conquers in the end by dying. The living cell, besides being the great rebel—or perhaps on this account—is just and wise. It asks only for just what it needs (air, light, heat and nourishment) and does not want more or less than its actual needs, and does not recognize economic distinctions." . . . "The mentality, on the other hand, is simply the faithful and eloquent corollary of economic conditions."

Treatment of Congenital Blindness.—De Salterain gives a historical review of the operations on record for congenital cataracts in both eyes, from Cheselden's pioneer work in the eighteenth century to Moreau's case in which the child was kept in the hospital for fifteen months afterward (1913). Moreau emphasized that removal of the cataracts is merely the preliminary to the child's learning to see, as the mental perception is a plant of slow growth. De Salterain has operated in nineteen cases at one sitting for congenital blindness; one of the patients was 32 and has been capable of self-support during the twenty years since. The others were all children, and he describes two cases in detail to confirm the necessity for continuous intelligent training in the use of the eyes as indispensable for vision. His own and the experiences on record confirm that the development of the child's mind before the operation is the decisive factor in what can be accomplished later. One very backward boy of 6 was given training by the Montessori method about a year after the operation, and in nine months was mentally and visually the peer of normal children of his age. The other child whose case is described was not mentally backward, and she was soon able to attend school with other children.

Epidemic Poliomyelitis.—The *Revista* gives the summaries of the official reports by the delegates to the Child Welfare Congress in regard to the prevalence of acute poliomyelitis in the different countries represented. Figueira said that there had been two small epidemics at Rio in eight years, a total of 120 cases with a mortality of 1:30. He queried whether the cases of cephaloplegia with recovery in a few

days might not be a rudimentary form of epidemic poliomyelitis. Aráoz Alfaro stated that there had never been an actual epidemic spread of the disease in Argentina, but since 1910 there had been a few hundred cases, the proportion a little higher since 1916. In his own practice he has never been able to trace the infection to its source. In one family the three children developed the disease almost at once. The only treatment which displayed any efficacy was the intraspinal injection of convalescents' serum. The early diagnosis and the systematic oversight of the lumbar puncture fluid are particularly important as they permit serotherapy in time, before paralysis is installed. The Uruguay delegate reported three epidemic waves in 1906, 1912, and 1916, and mentioned that pain was an important element in the clinical picture in Uruguay. He asked the adoption of a resolution urging pediatrists to study and practice serotherapy in this disease. Fontecilla reported that in Chile there have been no epidemics, but the sporadic form is relatively frequent. He queried also whether acute poliomyelitis might not be responsible for cases in which mild gastro-intestinal disturbances or slight fever were followed by symptoms of cerebral paralysis with epileptiform attacks and mental impairment, which may progress to idiocy. He urged serologic research into the origin and nature of infantile cerebral paralysis which is so common in America. The various speakers all mentioned that they had never seen cases of the cephaloplegia encountered at Rio (described in THE JOURNAL, Dec. 14, 1918, p. 2030). The classification of infants' gastro-intestinal disturbances, and tuberculous glandular disease were also discussed at special meetings, and the summaries are reproduced here.

Semana Médica, Buenos Aires

July 10, 1919, **26**, No. 28

*Tuberculin Treatment by Minutest Doses. J. José Vitón.—p. 29.
*Sterility in Men. F. A. Deluca and V. Widakowich.—p. 35.
Reactions of Criogenin. J. A. Sánchez.—p. 37.
Liberty to Teach and Liberty to Learn. L. Velasco Blanco.—p. 39.
Eugenics in Buenos Aires. J. Santos Fernández.—p. 41.

Broadening the Field of Tuberculin Treatment.—Vitón's views in regard to the causal benefit from treatment with minute doses of tuberculin have been summarized repeatedly in these columns as, for instance, May 24, 1919, p. 1581. He preaches that only the minutest doses, long kept up, are effectual; the ordinary large doses used by others do actual damage. His success with these minutest doses is not confined to pulmonary tuberculosis but Poncet's "chronic tuberculous rheumatism" subsides under it likewise, and a number of other lesions and morbid conditions which have never been connected with tuberculosis hitherto. Their disappearance under this method of treatment throws new light on their etiology, so that this "tuberculin diagnostic-therapeutic test," as he calls it, is opening new fields for research and effectual treatment. It has proved exceptionally useful for the new recruits, disclosing those who already are infected even slightly, and enabling them to throw off the infection, while they are spared the inconvenience and disappointments from futile treatment on other bases. He has found the minute doses extremely useful further to stimulate the vital forces in advanced pulmonary tuberculosis, as, for instance, when artificial pneumothorax has ceased to prove effectual.

He accepts it as an indication that the dose has been too large whenever disturbances of any kind follow. The No. 00 "ultrasmall dose" is 1/20 c.c. of a 100,000,000 solution. The next lower strength is made with one part of this solution and nine parts distilled water acidulated with ¼ per cent. phenol. Further dilutions are made in the same way down to quintillions or beyond. The optimal dose is that followed by frank improvement in the morbid picture. The first improvement is usually transient, and the reappearance of symptoms is the signal for a new injection. It should never be made before the benefit from the preceding injection begins to decline. As treatment continues, the benefit is seen to be more and more lasting each time, demonstrating an actual cumulative beneficial action. There can thus be no regularity in the dates of the injections. The intervals vary from case to case and at different periods in the same patient. In this article he expatiates in particular on the surprising benefit from tuberculin treatment in these minute doses in many morbid conditions which have never been supposed before to have any connection with tuberculosis. Their complete subsidence under this method of treatment certainly suggests that tuberculosis is one factor if not the only one. This group includes not only apical cases, but cases of peritonitis, pericolitis, enteritis in members of tuberculous families, joint, glandular and gastro-intestinal lesions, endocrine disturbances, etc. The tuberculin treatment reveals the tuberculous nature of the morbid process and often proceeds to cure it. In a case of unilateral optic neuritis, for instance, this treatment induced marked improvement and the presumptive diagnosis was confirmed by discovery of a minute tubercle close to the entrance of the optic nerve into the eye. Continuing the tuberculin treatment resulted in the complete subsidence of the lesion and recovery of vision. Both clinical, operative and necropsy findings, he states, have confirmed the tuberculous nature of this great variety of morbid conditions which show such marked improvement under these courses of minute doses of tuberculin. As long as appreciable improvement is manifest the same dose must be repeated indefinitely, merely "marking time to keep step," as it were.

Sterility in Men.—Deluca and Widakowich found azoospermia in 10 per cent. of 100 men of different classes of society at Buenos Aires. This is about the same proportion as has been reported from Paris, Berlin, Scotland and Brazil. This demonstrates, they say, the preponderance of the male in the responsibility for childlessness. All of the men with azoospermia had had gonococcus orchitis or epididymitis. The writers query whether women should not be protected by legislation against wedding men with azoospermia.

July 17, 1919, **26**, No. 29

Vaccine Therapy of Influenza. Julio Méndez.—p. 53.
Subsidence of Tuberculous Skin Disease under Tuberculin Treatment. C. Lugones.—p. 59.
Colpohematometra from Imperforate Hymen. H. Brignardello.—p. 63.
*Polymorphism of the Tubercle Bacillus. F. Jáuregui.—p. 66.
*Psychophysiology of Aviators. J. A. López.—p. 68.

Polymorphism of the Tubercle Bacillus.—Jáuregui is chief of the Instituto Maragliano at Buenos Aires, and he ascribes to Maragliano the announcement (1892) of the polymorphism of the tubercle bacillus within the single species. Ferrán followed him in 1897 with his announcement of the close connection between the tubercle bacillus and the colon bacillus. He explained that the acid-resistant tubercle bacillus sowed in a series of culture mediums containing constantly less and less glycogen, peptone and glycerin, the cultures agitated every twelve hours for a few months, finally lose their acid-resisting properties and acquire the properties of the colon bacillus in time. He describes further how it is possible to transform the colon bacillus in much the same way into the actual tubercle bacillus. Or the tubercle bacillus that has been transformed into the colon bacillus can be modified back into its pristine characteristics.

The Psychophysiology of the Aviator.—In this sixth article on the medical aspects of aviation, López discusses the prophylactic deductions from his research on the psychophysiology of aviators. He also discusses the influence of flights on the abdominal organs and kidneys. No personal experiences are described.

Siglo Médico, Madrid

Aug. 9, 1919, **66**, No. 3426

Hematology of Epilepsy. R. Alvarez de Toledo.—p. 641. To be continued.
Is Vaccination Against Cerebral Hemorrhage Possible? J. Ferrán. —p. 643. Conc'n.
*Diathermy in Treatment of Ulcerative Processes in Digestive Tract. Santiago Carro.—p. 645. Conc'n.
Bartholinitis in the Obese and its Treatment. Sicilia.—p. 648.
Influence of Aviation on the Sensibility, Tendon Reflexes and Muscular Force. C. Juarros.—p. 649.

Diathermy in Gastro-Intestinal Disease.—Carro regards diathermy as one more weapon at our disposal in the treat-

ment of chronic torpid ulceration in the digestive tract, refractory to other measures. He has applied it in five cases of the kind, and the lesion seemed to retrogress completely in one case and to be materially benefited in some of the others. It seemed also to hasten the recovery in three other, acute cases. The only contraindication, he says, is a tendency to hemorrhage.

Aug. 16, 1919, **66**, No. 3427

*Mixed Psychoneuroses. E. Fernández Sanz.—p. 665.
*Standardization of Antithyroid Serum. J. Sanchis Banús.—p. 668.
*Etiology of Mucomembranous Enteritis. D. Ramón Alcón.—p. 674.
Traumatic Shock. José Segovia y Caballero.—p. 676. Cont'n.

Mixed Psychoneuroses.—Fernández has encountered in his practice cases in which one psychoneurosis was evidently superposed on another. The prognosis is grave when psychasthenia breeds neurasthenia, as this indicates the seriousness of the former. When there are evidences of hysteria with a psychoneurosis, the prognosis is generally more favorable than without the hysteria so far as the other symptoms are concerned. The combination of psychasthenia with emotional depression has always proved a grave condition in his experience as it borders on actual insanity. This is also the case when a psychoneurosis of anxiety accompanies depression; constant vigilance may be necessary to prevent suicide if these symptoms are due to an actual psychosis. He emphasizes the necessity for the general practitioner to familiarize himself to a certain extent with these five great groups of psychoneuroses, as it is so important to distinguish between functional and organic disturbances of this nature, even in the simple cases.

The Murillo Method for Standardizing Antithyroid Serum.—Sanchis refers to Murillo's recent assertion that antithyroid serum enhances the susceptibility of guinea-pigs to diphtheria toxin to such a degree that they die from twelve to twenty-four hours earlier. Sanchis has been experimenting to learn whether the antithyroid serum had a similar activating action on the susceptibility of guinea-pigs and rabbits to cocain, but his experiments failed to show any action of the kind from the serum of thyroidectomized rabbits. The results were positive, however, with serum from hyperthyroid rabbits, the cocain proving fatal in half the time. He theorizes that the difference may be due to action on the vagus rather than on the sympathetic. Whether the Murillo phenomenon has anything to do with the therapeutic action of the serum is still undetermined.

Mucomembranous Enteritis.—Ramón Alcón relates some cases to illustrate the necessity for detecting and removing the cause of bowel disease instead of routine prescribing of drugs and dieting. In one case the enteritis had proved rebellious to five or six months of this treatment and the man was very thin and depressed. It was learned that the onset of the enteritis had followed a severe accident to his wife, and that a brother had epilepsy. He was then treated as for a neurosis and a prompt and permanent cure was soon realized. Another group of patients presented signs of the gouty diathesis, and the enteritis subsided under correct treatment of the arthritism. The stools in these cases often show oxalate and urate crystals, and these are liable to set up irritation. By varying the diet to induce an acid reaction in the stools, the putrefaction bacteria are crowded out and the bowel is given a chance to heal. Enteritis of this kind is rare among the poor. Fifty enteritis cases are encountered among the well-to-do for one among the poor. The enteritis following typhoid, influenza, etc., generally subsides as strength is regained.

Aug. 23, 1919, **66**, No. 3428

Indirect Surgical Treatment of Gastric Ulcer. C. Alvarez.—p. 689.
*Results of Intraspinal Treatment of General Paralysis. C. Juarros.—p. 691.

Intraspinal Treatment of General Paralysis.—Juarros supplements the intraspinal mercurialized autoserotherapy with intravenous injections of mercury and neo-arsphenamin. He remarks that in some of his patients the improvement might be called a cure, if he were inclined to be optimistic. In other cases no benefit was apparent, and in a few instances the intraspinal treatment coincided with an aggravation of the condition. The physical symptoms showed greater improvement than the mental.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 19, 1919, **2**, No. 3

*Fixation of Blood Specimens Showing Ameboid Movements. M. A. van Herwerden.—p. 170.
*Epileptiform Convulsions and Fat Embolism after Nonsurgical Orthopedic Intervention. H. Timmer.—p. 173.
*Heredity as an Element in Bacterial Diseases. A. L. Hagedoorn and A. C. Hagedoorn-Vorstheuvel la Brand.—p. 179.
*Torsion of Spleen. G. C. Nijhoff.—p. 183.
Case of Lethargic Encephalitis. J. F. Bosman.—p. 186.

Specimens of Blood Corpuscles Showing Ameboid Movements.—Van Herwerden insists that the ordinary methods of fixation of blood specimens fail to show the corpuscles in their natural state. This can be accomplished by the simple technic he uses as he demonstrates by a photomicrograph showing the most extreme ameboid movements in the leukocytes and thrombocytes. While the red corpuscles have the natural smooth, round outline, one mononuclear leukocyte is seen forming an L-shaped figure with nine fringe-like processes at one end, and three long arms at the other; a leukocyte shows over fifty ameboid processes. To seize the corpuscles in this ameboid phase, all that is necessary is to kill them rapidly while these movements are at their height. For this a watch-glass is placed in the incubator at 38 C, covered with a second watch-glass which is fitted inside with a piece of filter paper moistened with water. A drop of Ringer's fluid or of van Deetjen's fluid at body temperature is placed on a cover-glass, and a very small droplet of blood from the finger is dropped on it. The cover-glass is then placed between the two watch-glasses and left in this warm moist chamber for fifteen minutes. Then the upper watch-glass is rapidly changed for another containing a piece of filter paper impregnated with 40 per cent. formaldehyd. This is left for about half an hour, and then the cover-glass is taken out and the droplet of fluid on it is cautiously poured off, leaving the formed elements adhering to the cover-glass. The resulting preparations are remarkably fine. The blood platelets in particular show up instructively, sometimes larger than the erythrocytes, especially with the Heidenhain staining technic. He relates further that preliminary exposure to 3.1 mg. of radium bromid before applying the formaldehyd did not arrest the ameboid movements of the leukocytes even when the exposure was kept up for eight hours, that is, for a longer time than it takes to arrest completely the development of the ova of a small crustacean, *Daphnia pulex*. The thrombocytes, however, did not show any ameboid movements after this long period, either in the radium treated or untreated specimens.

Fat Embolism and Convulsions After Nonoperative Orthopedic Intervention.—Timmer describes the case of a girl of 7 who developed epileptiform convulsions forty-six hours after reduction of bilateral congenital dislocation of the hip joint. The convulsions kept up for two and a half hours and then subsided completely. Aberle and others ascribe such disturbances to fat embolism in the vessels of the brain, but Codivilla is among those who explain them as a kind of reflex epilepsy. In three of the cases on record there had been sudden asphyxia, dyspnea and cyanosis before the convulsions developed, and necropsy revealed fat embolism. In one of Aberle's three similar cases, with recovery, osteotomy had been done above the knee to correct contracture from a tuberculous process. Dyspnea and cyanosis developed suddenly as the leg was being straightened, and the child stopped breathing. Under massage of the heart and artificial respiration the child began to breathe again, but the narcosis passed into deep coma. Half an hour after the breathing had stopped there were clonic spasms in both arms. By the end of three quarters of an hour the child reacted to stimuli to the skin and was soon completely restored. It seems evident here that in straightening the bones fat was forced into the blood vessels and it obstructed the capillaries in the lung. Later, the fat reached the vessels in the brain and induced the clonic spasms.

Epileptiform convulsions apparently develop only in the predisposed, in neuropaths, and in children with cerebral paralysis or Little's disease. There is usually an interval of from two to six days after the intervention, which is always one that required considerable wrenching of soft parts, such as correction of contracture or congenital dislocation of the hip joint. The disturbances are transient, subsiding completely in a few hours. Analysis of fifty fatal cases of fat embolism on record shows that the list includes only six children, although operations such as are liable to induce fat embolism are done commonly on children. There are no fat cells in the long bones before the age of 6 or 7; after the age of 14 the fat cells may be numerous. Atrophy of the bone is peculiarly liable to be accompanied by production of fat. We can thus assume that fat embolism need not be feared with young children unless there has been protracted inactivity and there is much atrophy of the bone, such as is likely with paralysis. Under these conditions it is wisest to refrain from osteoclasis and similar procedures. With a predisposition to nervous disturbance, with Little's disease or cerebral paralysis, extreme caution is necessary. Bilateral correction of hip joint disease should be done at two sittings, and rough force should not be applied. Timmer adds that fat in the soft parts is more compact and is not so readily taken up by the blood vessels as fat from the bone marrow.

Heredity as a Factor in Bacterial Disease.—Hagedoorn reports what he thinks is the first instance in which has been demonstrated the part played by heredity in modifying the susceptibility to bacterial disease. A number of Japanese dancing mice were crossed with ordinary white mice, and when an epidemic broke out in the 700 cages in three different rooms, the Japanese mice all died, but not the white mice, and lack of susceptibility proved a dominant among the offspring, as also among the offspring of the bastards paired with the white mice. These data throw light on the incidence of tuberculosis: why some escape and others develop the disease. Analysis of the heredity may well repay the trouble.

Torsion of the Spleen.—Nijhoff's patient was a woman of 72, previously healthy until sudden abdominal pain and nausea developed with other symptoms accepted as indicating torsion of an ovarian tumor. Splenectomy is easier and simpler in these cases than with a normally located spleen.

Aug. 2, 1919, **2**, No. 5

*Fracture of the Neck of the Femur. W. F. Wassink.—p. 319.
*Id. J. Schoemaker.—p. 333.
Case of Cerebral Hemorrhage. Van Braam Houckgeest.—p. 343.
Case of Multilocular Pancreas Cyst. C. Orbaan, Jr.—p. 345.

Fracture of the Neck of the Femur.—Wassink devotes fourteen and Schoemaker ten pages to description of the remote findings in ten and in twelve cases of fracture of the neck of the femur, with eleven and three illustrations, respectively. These experiences demonstrate, Wassink declares, that fractures of this kind seldom heal, that the lack of apposition of the fracture surfaces prevents the formation of periosteal callus and hence the parts cannot grow together. He found also that the stumps were not in contact even when the roentgenograms seemed to demonstrate good coaptation. Some of his cases demonstrated further that a good position at first became defective later from traction by muscles. The effect of weight bearing also contributes to this. The circulation in the parts is also seriously compromised, especially in the proximal portion, by the trauma and the dislocation. This may prevent consolidation even when the parts are in a good position. Some of his cases show that with the old defective methods of treatment, a good outcome may occasionally be secured, or even without any treatment. To ensure good results, the coaptation must be satisfactory and the parts must be held in the proper position long enough for them to grow solidly together. This takes an unusually long time for this special fracture on account of the exceptional strain on this bone.

Schoemaker remarks that the more innocent the fracture looks, the graver it actually is, as a rule. The swelling and other phenomena are much less pronounced with fracture of the neck than with trochanter or basal fracture. Fracture of the neck can heal with a growth of callus around it although the neck itself may not take direct part in this reconstruction. In one case illustrated a voluminous callus developed in this way in six weeks in a woman of 81. To favor healing of basal fracture in a good position he turns the leg far inward until the axis of the foot lies in the frontal plane. This brings the neck approximately into its normal position and stretches the muscles so that they exert pressure on the trochanter mass and on the base of the neck, and promote the locking of the neck in the mass of the trochanter. The neck slants a little more than usual. Then slight abduction follows which brings the neck almost into its normal position while conditions favor its retaining this position, and healing proceeds exceptionally rapidly. In 167 cases thus treated, only once was there insufficient callus production. The foot must be held in this extreme inward rotation for six weeks; a plaster dressing is usually the best means to accomplish this, but it is not absolutely necessary if the patient is in bed.

With fracture of the neck in the middle or close to the head, treatment must be quite different. No callus forms with fracture of the neck itself. The aim here is to utilize the weight of the body to force the head down on the neck. By rotating the leg inward, with maximal abduction we can bring the neck up under the head. The plaster cast is applied to half way up the thigh, the assistant forcing the foot up to ward off equinus. Then both legs are rotated inward to the extreme limit. If only the diseased leg is rotated, the pelvis moves with it. The toes thus point toward each other, and a third assistant twists the knee and its plaster cast—all forcibly but very slowly. The leg is placed in abduction at the same time, and when the inward rotation is concluded, the abduction is continued to the extreme limit, abducting the sound leg at the same time but less forcibly. Now the operator takes hold himself, pressing the thigh outward with one hand while with the other hand he pushes the trochanter inward and down. When this has been done to the extreme possible without violence, the plaster dressing is completed, enclosing the whole of the pelvis and on the sound side high up on the ribs, to maintain the abduction. It would be still better if the sound leg could be encased in the plaster, but this would prevent walking. Abduction is about 45 degrees, and the knee is turned almost completely inward. His roentgenograms show the almost perfect results realized with this technic in 23 cases. In 8 others the outcome was a total failure; in 3 the patients can walk but not well; 8 are still in treatment, and 10 have died since, of the 52 cases of subcapital fracture treated in this way. In the cases of failure, operative intervention may be required. The latter is not advisable for the aged, and the above nonoperative technic is almost certain to succeed in the young. The field for operative interference is thus restricted to the middle aged, and Noordenbos' method of fixation with a peg from the fibula driven into the head seems to be most promising.

Hospitalstidende, Copenhagen

Sept. 10, 1919, **62**, No. 37

*Light Baths. C. Sonne.—p. 1041. Com'd in No. 36, p. 1017.

Mode of Action of General Light Baths.—The results of Sonne's experiments apparently demonstrate that the chemical rays have very little to do with the therapeutic action of heliotherapy or general light baths. The light from the sun, the special arc electric lights, and the mercury vapor light all have the property, he says, of heating the blood to a remarkable degree without at the same time heating the body tissues. It seems plausible to assume that to this action, common to these three sources of radiant energy, their unmistakable therapeutic effect is due.

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Influenza as Cause of Death. H. J. Hansen.—p. 1451.
Alum in Treatment of Whooping-Cough. H. P. B. Barfod.—p. 1463.